Álvaro Rocha · José Luís Reis ·
Marc K. Peter · Ricardo Cayolla ·
Sandra Loureiro ·
Zorica Bogdanović   *Editors*

Marketing and Smart Technologies

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Editors
Álvaro Rocha
ISEG
University of Lisbon
Lisbon, Portugal

José Luís Reis
University Institute of Maia—ISMAI
Maia, Portugal

Ricardo Cayolla
Instituto Português de Administração e
Marketing
Portucalense University
Porto, Portugal

Marc K. Peter
FHNW School of Business
University of Applied Sciences and Arts
Olten, Solothurn, Switzerland

Sandra Loureiro
ISCTE-University Institute of Lisbon
Lisbon, Portugal

Zorica Bogdanović
Faculty of Organizational Sciences
University of Belgrade
Belgrade, Serbia

Preface

This book is composed by the papers written in English and accepted for presentation and discussion at The 2020 International Conference on Marketing and Technologies (ICMarkTech'20). This conference had the support of the ISCTE-University Institute of Lisbon and Iberian Association for Information Systems and Technologies (AISTI). It took place at Lisbon, Portugal, during October 8–10, 2020.

The 2020 International Conference on Marketing and Technologies (ICMarkTech'20) is an international forum for researchers and professionals to present and discuss the latest innovations, trends, results, experiences and concerns in the various fields of marketing and technologies related to it.

The Program Committee of ICMarkTech'20 was composed of a multidisciplinary group of 225 experts and those who are intimately concerned with marketing and technologies. They have had the responsibility for evaluating, in a "double-blind review" process, the papers received for each of the main themes proposed for the conference: (A) Artificial Intelligence Applied in Marketing; (B) Virtual and Augmented Reality in Marketing; (C) Business Intelligence Databases and Marketing; (D) Data Mining and Big Data-Marketing Data Science; (E) Web Marketing, E-commerce and V-commerce; (F) Social Media and Networking; (G) Omnichannel and Marketing Communication; H) Marketing, Geomarketing and IoT; (I) Marketing Automation and Marketing Inbound; (J) Machine Learning Applied to Marketing; (K) Customer Data Management and CRM; (L) Neuromarketing Technologies; (M) Mobile Marketing and Wearable Technologies; and (N) Gamification Technologies to Marketing.

ICMarkTech'20 received about 200 contributions from 22 countries around the world. The papers accepted for presentation and discussion at the conference are published by Springer (this book) and by AISTI and will be submitted for indexing by ISI, EI-Compendex, Scopus, and Google Scholar, among others.

We acknowledge all of those who contributed to the staging of ICMarkTech'20 (authors, committees, workshop organizers and sponsors). We deeply appreciate their involvement and support that was crucial for the success of ICMarkTech'20.

Lisbon, Portugal   Álvaro Rocha
October 2020   José Luís Reis
                                                                   Marc K. Peter
                                                                 Ricardo Cayolla
                                                                 Sandra Loureiro
                                                              Zorica Bogdanović

Contents

About the Editors

Álvaro Rocha holds the title of Honorary Professor and holds a D.Sc. in Information Science, Ph.D. in Information Systems and Technologies, M.Sc. in Information Management and BCS in Computer Science. He is Professor of Information Systems at the University of Lisbon, President of AISTI (the Iberian Association for Information Systems and Technologies), Chair of the IEEE Portugal Section Systems, Man, and Cybernetics Society Chapter and Editor-in-Chief of both JISEM (Journal of Information Systems Engineering & Management) and RISTI (Iberian Journal of Information Systems and Technologies).

José Luís Reis received Ph.D. in Technologies and Information Systems from the University of Minho and is Professor with the title of specialist in Management and Administration by IPAM, Porto. He is a Professor at ISMAI, IPAM and as invited at ISCAP.IPP. He is the author and co-author of several books, namely "Personalization in Marketing – Technologies and Information Systems", "Marketing in agri-food – fundamentals and case studies", "Gamification Model for SMEs" and "Marketing and Smart Technologies".

Marc K. Peter received his Doctorate from CSU Sydney, an Executive MBA from UAS Bern/Babson College/PKU Beijing and a Master of Marketing from the University of Basel. He is a Fellow of both the British Computer Society and the Chartered Institute of Marketing. He is a Professor of Digital Business and Head of the Competence Center Digital Transformation at the FHNW School of Business in Olten, Switzerland. His research and teaching focus are digital transformation, digital marketing and cyber security.

Ricardo Cayolla received Ph.D. in "Marketing and Strategy and is the author of seven books. He is Neuroscience Co-Creator of the projects "Super-Humans" and "How Humans Learn". Original researcher integrates research done in neuroscience. With a graduation in "Design Thinking for Business Innovation" from

ESADE, he applies the research in several areas in the business world. He is Visiting Professor in Marketing in Eastern Central University of Science and Technology (ECUST), Shanghai, China, since March 2017.

Sandra Loureiro (Ph.D.) is Associate Professor at Instituto Universitário de Lisboa (ISCTE-IUL) and Business Research Unit (BRU-IUL), and she is Director of the Ph.D. in Management, specialization in Marketing, and the Ph.D. in Tourism Management. Her current research interests include relationships, tourism marketing and technologies related issues, such as VR, AR and AI. Her papers have been published in a variety of peer-reviewed journals that include Journal of Marketing, Journal of Retailing, Tourism Management, Journal of Business Research, International Journal of Hospitality Management, Journal of Retailing and Consumer Services, Journal of Service Management, Journal of Cleaner Production and Journal of Brand Management or Online Information Review.

Zorica Bogdanović received Ph.D. and is Associate Professor at the Faculty of Organizational Sciences, University of Belgrade, Serbia. She teaches subjects in the areas of e-business and e-business technologies on B.Sc., M.Sc. and Ph.D. studies. Her professional and scientific interests include e-business, Internet marketing, Internet technologies and Internet of things. The results of her research have been published in many well-known international journals and conference proceedings.

Part I
Artificial Intelligence Applied in Marketing

Chapter 1
How Committed I Am with Tourist-Intelligent Virtual Assistants?

Sandra Maria Correia Loureiro and Ricardo Godinho Bilro

Abstract This study analyzes drivers and outcomes of commitment with tourist-intelligent virtual assistants. A convenience sample of 124 usable questionnaires was used. Findings reveal that attachment and emotional values influence commitment with tourist-intelligent virtual assistants. Commitment, in turn, influences loyalty intentions. This study is a first attempt on analyzing the attachment process between tourists (as users) and intelligent virtual assistants

1.1 Introduction

Artificial intelligence (AI) (representing algorithms and machines that exhibit aspects of human intelligence) may be regarded as having four possible types of intelligence: mechanical, analytical, intuitive, and empathetic [1]. Mechanical AI is the ability to perform routines and tasks automatically. These mechanical processes are not associated with creativity and are operationalized without any extensive thoughts e.g., [2–4].

Analytical intelligence (AI) represents the ability to process information for problem-solving and learn from that process [5]. Jobs associated with this ability are, for instance, data scientists, accountants, or financial analysts. Thus, machine learning and data analytics are the major analytical AI applications [6]. However, these machines do not have a mind, conscious states, or subjective awareness [7]. The tasks are complex but systematic, and creativity is not needed.

Intuitive AI aggregates self-awareness, sentience, and consciousness [7]. For instance, Google's DeepMind AlphaGo can simulate instinct [3], the poker player Libratus can do strategic thinking with incomplete information [4] and Watson from IBM can understand, learn, and interact into the business-to-business context.

S. M. C. Loureiro (✉) · R. G. Bilro
Instituto Universitário de Lisboa (ISCTE-IUL), Business Research Unit (BRU-IUL), Lisboa, Portugal
e-mail: sandramloureiro@netcabo.pt

R. G. Bilro
e-mail: bilro.ricardo@gmail.com

Empathetic intelligence means the ability to understand other humans' emotions and respond emotionally [8]. Empathetic skill considers communication, leadership, advocating, teamwork, charisma, or the ability to negotiate [9]. Jobs related to these abilities are politicians, psychiatrists, or negotiators. Nevertheless, a lengthy ongoing discussion has been done about whether AI machines can actually feel in the same way as humans do [10].

Keeping this in mind, the present research intends to explore how tourists and intelligent virtual assistants may relate each other in order to create commitment. Therefore, the current study (i) explores attachment and emotional value as antecedents of commitment to the intelligent virtual assistants, (ii) understands loyalty intentions as outcomes of commitment to the intelligent virtual assistants.

1.2 Literature Review

Attachment means that an individual or tourist will feel close to an intelligent virtual assistant when the virtual assistant is perceived as a means for self-expansion [11]. Attachment involves a bond, cognitive and emotional connection between the intelligent virtual assistant and the self [12].

Tourists may develop a sense of oneness with the virtual assistant [13] and develop an anxiety from brand–self-separation or comfort from brand–self-proximity. Indeed, the connection between virtual assistant and the self is a core aspect of attachment. Positive feelings and memories about the virtual assistant combined with the virtual assistant-related thoughts aggregate the prominence of the intelligent virtual assistant in the tourist life [14].

Be attached may lead to develop commitment. Commitment may occur when "an exchange partner believing that an ongoing relationship with another is so important as to warrant maximum efforts at maintaining it" [15, p. 23]. In this case, the partners are the tourist and the virtual assistant. Hence, the emotional ties developed between these partners may enhance their commitment [16]. The cognitive and emotional connection between the virtual assistant and the tourist self (self-connection) [12, 17] together with positive feelings and memories about the virtual assistant (prominence) [14, 16, 18] will contribute to develop a continuous relationship, that is commitment. We proposed the following hypothesis (see Fig. 1.1)):

H1: Attachment is positively associated with the commitment to the virtual assistant.

Diverse definitions of perceived emerge in the literature [19, 20]. One of the most common is proposed by Zeithaml [19, p. 14] as "…the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given". Values may be regarded as believes. As Solomon [21, p. 113] argue, "a value can be defined as a belief about some desirable end-state that transcends specific situations and guides selection of behaviour". Beliefs are considered as drivers of attitudes and behaviors [22, 23]. Thus, we may infer that values may influence the commitment [24] with the intelligent virtual assistant. Particularly, we consider that emotional
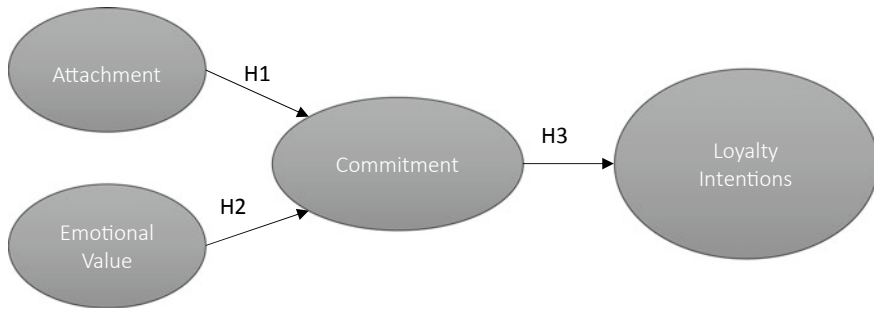
Fig. 1.1 Proposed model

values will enhance the intentions to maintain the relationship between an individual and the virtual assistant. In this vein, we propose the following hypothesis:

H2: Emotional value is positively associated with the commitment toward the virtual assistant.

Attachment has been demonstrated that influence behavior intentions [25] and commitment can also be considered as a driver to loyalty [17]. In the current study, we explore the path flow that regards attachment as influencing commitment and this last, in turn, leads to loyalty intentions. When an individual desires to continue the relationship with the virtual assistant and have faith with it, the relationship is expected to create such a tie that leads the user to recommend the virtual assistant to others and keep choosing and using the virtual assistant (loyalty intentions) [26]. Thus, we suggest the following hypothesis:

H3: Commitment to the virtual assistant is positively associated with loyalty intentions.

1.3 Methodology

Data was collected through an online survey using Qualtrics, and we collected 124 answers from participants who frequently use intelligent virtual assistant for the purpose of tourism issues. Scales are adapted from previous studies (see Fig. 1.1). All items are measured using a liker-type scale of seven points, except for attachment where the scale of evaluation is from $0 =$ Not at all to $10 =$ completely. The last part of the questionnaire concerns socio-demographic data. Then, the questionnaire was pilot tested with the help of 12 experts regarding users of virtual assistants to ensure that the questions were understood by the respondents and there were no problems with the wording or measurement. Only a few adjustments were made.

Although the questionnaire was developed based on instruments used in previous studies, the structure was created in order to avoid common method bias: The items were prepared to avoid ambiguity, and the physical distance between measures of the same construct was also taken into consideration. Participants are 44% female,

Table 1.1 Constructs employed

Construct	Source
Attachment	Park et al. [14]
Emotional value	Sweeneya and Soutarb [20]
Commitment	Itani et al. [24]
Loyalty intentions	Johnson et al. [26]

the average age belongs to the range between 20 and 40 yr, and most of them have graduate education (Table 1.1).

1.4 Results

Partial least squares approach is employed to treat data. First the measurement model is analyzed with all composite reliability scores above 0.7 and AVE above 0.5 [27]. At a second-order level, the weights are also significant, having a positive beta weight above 0.2. There are also no multicollinearity effects [28] (Table 1.2).

The discriminant validity is also verified for both the Fornell–Larcker criterion and through heterotrait–monotrait ratio (HTMT) (see Table 1.3). The correlations between each first-order construct and the second-order construct are > 0.71 ($r_{A\text{-prominence}} = 0.964$ and ($r_{A\text{-self-connection}} = 0.930$), revealing that they have more than half of their variance in common, as expected [29].

In the current study, a non-parametric approach, known as Bootstrap (5000 resampling), is used to estimate the precision of the PLS estimates and support the hypotheses (Hair et al. [27]). All path coefficients are found to be significant at the 0.001 or 0.05 levels, revealing that the three hypotheses are confirmed (see Fig. 1.2).

Table 1.2 Measurement results

	Cronbach's Alpha	rho_A	Composite reliability	Average variance extracted (AVE)
Prominence	0.916	0.927	0.938	0.754
Self-connection	0.868	0.898	0.920	0.796
Commitment	0.888	0.889	0.947	0.900
Emotional value	0.933	0.966	0.949	0.791
Loyalty intentions	0.781	0.782	0.873	0.697
Second-order formative construct		First-order construct	Weight	VIF
	Attachment	Prominence	0.612***	2.760
		Self-connection	0.441***	2.760

Note $^{*}p < 0.001$

Table 1.3 Discriminant validity

Fornell–Larcker Criterion	Commitment	Emotional value	Loyalty intentions	Prominence	Self-connection
Commitment	0.950				
Emotional value	0.752	0.889			
Loyalty intentions	0.430	0.402	0.835		
Prominence	0.117	0.008	0.475	0.892	
Self-connection	0.045	0.191	0.566	0.799	0.948
Heterotrait–monotrait ratio (HTMT)	Commitment	Emotional value	Loyalty intentions	Prominence	Self-connection
Commitment					
Emotional value	0.790				
Loyalty intentions	0.511	0.452			
Prominence	0.136	0.111	0.569		
Self-connection	0.055	0.215	0.667	0.897	
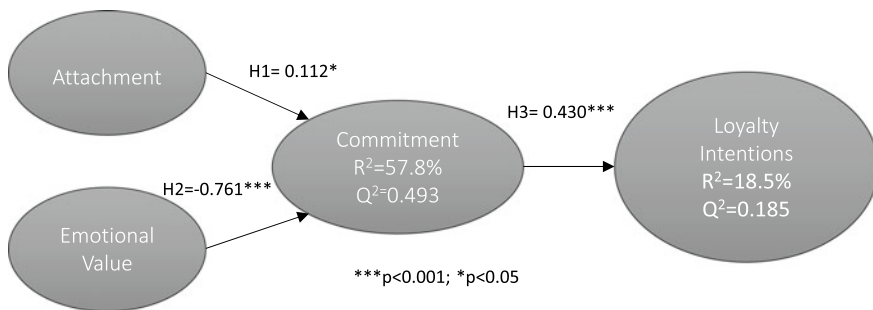
Fig. 1.2 Structural results

1.5 Conclusions and Implications

The findings seem to highlight that the attachment process is effective in developing commitment with the intelligent virtual assistant. Yet, the emotional values and beliefs of tourists are even more strengh to generate a desire to continue to have the relationship with the intelligent virtual assistant. The loyalty toward a certain intelligent virtual assistant will be possible when tourists develop a commitment with it.

In what concerns the second-order construct–attachment–prominence (weight = 0.612) is the dimension that emerges as the most relevant in shaping the overall attachment. Prominence demonstrates the salience of the affective and cognitive ties connecting the tourist and the intelligent virtual assistant. As Park et al. [14] claim, this salience is shown by the ease and frequency with which the individual

has thoughts and feelings about the virtual assistant. When concerns to the self-connection, this reflects the cognitive and emotional connection between the two partners. Tourist may develop complex feelings about the virtual assistant, which include anxiety and sadness when they are not using or in connection with the virtual assistant. When such situation occurs, we may claim that individuals connect with the virtual assistant through the self. This attachment process is developed over time leading to a commitment, and consequently, the tourist will create a strong interest in keeping using the virtual assistant and proactively recommend it to others.

Emotional values are beliefs [16, 22] that a tourist may have about using the virtual assistant, which are willingness to generate pleasure when using it. Therefore, these beliefs are very effective ($\beta = 0.761$) drivers to become committed to the relationship with the virtual assistant.

The research on AI is still in very early stage, and the AI algorithms will be deeper developed over time, then are even able to improve themselves and becoming closer to human beings. In this vein, the attachment process will become an important mechanism to be further analyzed and discussed.

The technological advancements will lead to an increase in users, not only from the firm's side but mostly from the users' side. This situation will lead inevitably to a new set of organizations, suppliers, and technologies that will try to offer products in this specific environment with the highest quality as possible. Using artificial intelligence demands a large sum of knowledge, which can be achieved through already existing environments, or by emerging developed forms of technology.

In the future, other concept and construct may be explored to analyze the interaction between users and virtual assistants. We recommend exploring concepts such as willingness to sacrifice, brand love, or brand experience.

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Chapter 2
Human Intelligence Versus Artificial Intelligence: A Comparison of Traditional and AI-Based Methods for Prospect Generation

Christian Stadlmann and **Andreas Zehetner**

Abstract This contribution deals with a comparison of two traditional approaches and one AI-based data mining tool to collect and interpret data for prospect generation. Traditional prospect generation methods like manual web search or using purchased data from external providers may create high costs and efforts and are subject to failures and waste coverage through outdated and untargeted data. In contrast, AI-based methods claim to provide better results at lower costs. Based on a real case, the authors compare effects of these three prospect generation methods. AI-based data mining tools compensate for some weaknesses of other methods, especially because they do not need pre-defined selection criteria which might bias the results. In addition, they involve less effort from the researcher. However, the results in generating concrete prospects may be still weaker than with traditional methods if web crawling activities are influenced by underlying databases. For academic research in the field of prospect generation, this study provides a fact-based comparison of approaches. Implications for businesses include the advice to combine methods rather than to rely on a single approach. The time available for research and the complexity of the target market have an influence on the selection of the prospect generation approach.

2.1 Introduction

Discovering new potential customers is a fundamental task in sales and marketing for entering new geographic markets, exploring novel segments or exploiting new product applications [1]. The process of detecting and assessing new potential clients is called sales prospecting [11]. It is the starting point of the customer acquisition process [1]. Identifying prospects, however, is a difficult exercise especially in the B2B context [23]. Different approaches exist to tackle this issue, among them manually working with a list of suspects which are then further selected into a list of

C. Stadlmann (✉) · A. Zehetner
University of Applied Sciences Upper Austria, Steyr, Austria
e-mail: christian.stadlmann@fh-steyr.at

prospects [6]. Another approach is to use commercial data acquired from specialized suppliers to cut down to a limited list of firms [7]. However, the enormous quantities of information in those datasets tend to crush B2B marketers, often resulting in the usage of arbitrary rules to qualify prospects [6].

The high complexity of prospecting activities, poor data quality and the difficulties and efforts in the gathering process represents common difficulties in the prospecting process [17]. Apart from that, prospecting is time consuming for salespeople, as all collected information needs to be worked through [8]. If prospects are discovered by using web data, the search for potential firms itself may be more challenging and consumes a lot of time [25]. The purchasing of commercial data from third parties, though, is often expensive and characterized by poorer quality [7].

Newer approaches build on a structured, data-driven approach for prospecting [1] and the use of data mining or other forms of artificial intelligence to close the market knowledge gap [21] and automatize prospecting processes [8]. In order to increase predictive performance, D'Haen and Van den Poel [6] propose a combination of web data mining and available commercial data sources.

Using a B2B case study, this paper compares three approaches of discovering prospects, i.e. a systematic manual web search, the use of commercial databases and an AI-based web data mining approach. Aspects of efficiency and effectiveness of the three methods are investigated as they have an effect on sales performance [30]. Prospecting is considered efficient, when it is done in a timely manner [27]. The quality of the prospects directly influences the conversion rate [7] and is therefore examined in this research. This paper contributes to the existing prospecting research in three dimensions: by providing evidence which of the three methods provides higher quantities of prospects, the highest quality of prospects, and employs the lowest resources. The remainder of this work is structured in the following way. First, the three prospecting approaches are discussed. Second, the methodology of the case study approach and three methods are explained. Next, the results are elaborated. Finally, the paper ends with a section about contributions and limitations.

2.2 Methods for Generating Prospects

Sales funnel concepts are a common approach used to define prospects and understand their position in the customer acquisition process [13]. This study is based on the concept of D'Haen and Van den Poel [6], who distinguish between the following sales funnel stages: suspects, prospects, leads and customers. The beginning of the acquisition process is usually a list of suspects. These are all the available potential new customers and theoretically include all possible companies in a B2B context that a seller becomes aware of. However, the number of suspects is usually limited by the resources available, such as time and investment in cold call lists [29]. Järvinen and Taiminen [13] point out that an excessive pool of suspects can be counterproductive, as the subsequent step of screening and preselection would become too complicated.

In the next selection step, the interesting candidates are selected according to pre-defined criteria. The results are the prospects. The selection of prospects is seen as one of the most difficult tasks in the customer acquisition process demanding considerable resources [19, 26]. The quality of prospects should be placed before the number of prospects, as B2B sellers can benefit from it in the following steps [13]. Therefore, the major aim of this study is to compare different methods of gaining prospects which fulfil all pre-defined criteria. The next step of the customer acquisition process is to sift through prospects to acquire leads. This selection concerns the likelihood of the evaluated companies to respond to consecutive contact by the sales force. Since a generalizable consensus on the characteristics of a highly qualified lead is rather problematic [13] as different firms use diverse factors of qualification [18], the focus of this study is solely on prospects that meet all pre-defined selection criteria. Finally, when leads become clients of the firm, they are called customers [7].

A list of quality prospects, meeting the pre-defined criteria, can be retrieved through various methods [14]. One of the sources is the Internet [25], i.e. through a manual web search. As manual web searching is considered boring and exhausting [19], it is, therefore, often handed over to lower-cost employees [5]. Intuition and simple rules help to validate the qualification of prospects [17]. This method is seen as the most time consuming [24] and most intuitive one despite having access to more accurate insights into Internet resources [7].

Specialized vendors are a second common source for acquiring lists of prospects [17]. As model-based support systems make the prospecting process less intuitive, standardized commercial data from specialized suppliers lead to an automation of the search activities. A serious weakness with these data sources, however, is the tendency to being costly and of unclear quality due to absent information or questionable sources [8]. The advantage of quickly generating prospecting lists may later hamper productivity when pursuing the gathered low-quality prospects in the sales process [6]. Hence, this approach is seen as a fast start, but expensive with possibly limited added value [7].

Automating prospecting activities by the use of data mining in B2B settings may offer unique advantages, which other technologies cannot [24]. Data mining techniques are methods for uncovering and extracting veiled knowledge in enormous databases executed by employing artificial intelligence without human intervention [24]. Particularly through intelligent web crawling techniques, higher quality can be retrieved. Researchers recommend combining data mining techniques with commercial datasets and web data for better prospecting results [7]. This combination of AI enabled and supported data source and data mining techniques is the third approach investigated in this study.

2.3 Methodology

A comparative study of three prospecting methods has been conducted. First, the traditional method of a systematic web analysis is presented. Secondly, the use of commercial data is investigated. Thirdly, the characteristics and framework of AI supported data mining and web crawling solutions are outlined. The outcomes of the three approaches are compared with respect to their effect on prospect generation.

This research applies the above-mentioned methods in a real-life case study in a software sales context. As sales force automation tools, like data mining applications, often work best in saturated industries in which market permeation is strategically decisive [6], the B2B environment with this particular industry has been chosen. Long et al. [16] have emphasized that in settings in which clients are large corporations, a few in number and well-known, automated prospect discovery tools are of low significance as the selection itself is limited. Hence, a target market with a huge pool of potential customers and undergoing a major upheaval has been chosen for this experiment as it can be expected that the selection process is costly and overloaded with information [6].

2.3.1 Empirical Context

A mid-sized company developing and marketing software applications for the waste management sector was selected as the subject of the study. Mid-sized and large companies whose business model is recycling (sector 1), waste-to-energy (sector 2), operating landfill sites (sector 3) or waste collection and transfer (sector 4) are the primary customer groups where prospects should be generated using different approaches as discussed above. The USA was chosen as target country for discovering prospective customers. The US waste management sector is characterized by small- and medium-sized enterprises which account for approximately 20% of total turnover. A few large companies represent about 1% of the private sector, but generate 46% of the total turnover. There are more than 20,000 companies in the US waste management market and 70% of these are privately owned [2]. Due to increasingly strict environmental laws, the waste industry is currently undergoing a strong consolidation process as many smaller companies cannot keep up with the necessary investments to comply with these laws [2]. According to the software company, the classic sales cycle takes approximately 28 months, which is a result of the complex buying process of the customers [28]. Hence, the overall target was to get a list of around 200 potential companies, which could later be continuously monitored. This defined number of prospects represents a still manageable size for acquisition activities of the case firm. Therefore, firmographic data were selected as qualification criteria for the prospects. This is in line with typical approaches in B2B [8]. The country (USA), industry (waste management industry), sectors (1–4), minimum annual revenue ($\geq$

$40 M) and number of employees (≥ 500) were therefore the key business demographics for discovering the prospects of the software company. The analysis was conducted from October 2019 until January 2020. Finally, three distinct approaches for discovering potential customers were benchmarked according to quantity, quality and resources needed.

2.3.2 Systematic Web Search

The opening method for searching prospects that fulfilled the defined qualification criteria was done through a systematic web search by a team of seven researchers. Here, the research was split up into three approaches: First, companies were searched on three of the largest search engines, i.e. Google, Bing and DuckDuckGo [9]. As a preparatory step, keywords were identified in advance. Three globally well-known waste management companies which were named by the software company and the four sectors served as starting points. Then, more keywords were identified through Google Trends, establishing connections between the different companies. After collecting the first prospects, more keywords were discovered using the same procedure. The resulting key words were among others recycling, landfill, waste transportation, waste solution and environmental management. These key words were then combined with Boolean operators (AND and OR). Next, the discovered companies were included if they fulfilled the following criteria: (1) business in at least one of the four sectors, (2) offering waste management activities as a business (i.e. sorting out consulting or non-profit organizations) and (3) operation in the USA. Finally, more publicly available information about these suspects, such as the number of employees or yearly turnover, was searched through the professional business research Web sites, namely Bloomberg.com and LinkedIn.com and through Wikipedia.org.

Second, associations and platforms were scanned in parallel. The previously used key words were combined with the words "association", "community" and "cluster". Then an investigation of journals, case studies and events published on the Web sites of the resulting associations and platforms followed. The aim was to get additional potential companies through the lists of members or of participants, placed ads, authorships, sponsors or mentioned best practices. At the end, eight industry associations and platforms were examined.

The third approach was through professional magazines and trade fairs in the US waste management field. Therefore, the key words of the first approach were combined with further key words such as "magazine" or "trade fair". The resulting magazines were scanned in the same way as in the second approach. Additionally, the exhibitors list of the trade fairs served as a source for identifying additional prospects. At the end, six professional magazines and two industry related trade fairs were explored. After having reached a result of about 35 prospects from each of the three approaches, the search was stopped in order to analyse the data.

2.3.3 Database Research

The use of commercial data is a common way to generate prospects. However, the main challenges with this approach are that these databases are either of poor quality or often expensive [7]. On the other hand, sales people often rely on intuition and simple rules [17] which can easily be used with commercial datasets. Professional business research companies design the datasets, compile and consistently update the data in order to sell the data to their customers [29]. One of the most reliable databases is the Hoovers of the company Dun & Bradstreet [12] which was chosen for this research. A representative of the Austrian Trade Commission in Chicago (US), an expert in US industry classification systems, conducted the database research. Searching for different industries requires a principle understanding of the American Industry Classification Systems and needs access to the fee-based database. Hence, the researcher identified the industry codes of the interesting sectors in the Standard Industrial Classification (SIC) system and the North American Industry Classification System [10] as NAICS 562212 (Solid Waste Landfill), NAICS 562920 (Materials Recovery Facilities), SIC 49539905 (Recycling, Waste Materials), etc. In order to meet the sector-specific characteristics and to get more accurate results, codes of both classification systems were put into the commercial database at a fine-graded level (at least six-digit codes). The result was still a list of several thousand companies as alone the search code "Solid Waste Landfill" (NAICS 562212) resulted in 7,634 companies or "Recycling, Waste Materials" (SIC 49539905) in 16,128 entries. Thus, the list had to be narrowed down to the requirements of the company. Therefore, the minimum annual revenue of $40 million and the minimum number of employees of 50 were set as selection criteria. These criteria are in accordance with the firmographic framework and led finally to a manually processable list of companies for further checking of the quality of the results.

2.3.4 Data Mining Instrument

Following D'Haen et al. [7], a data mining technique combined with web crawling and a commercial database was applied to generate prospects in this comparative study. As such solutions should be easily accessible (i.e. web based), fully automated, fast, usable for any industry or business and particularly not expensive [6], a prototypic tool of the University of Szeged was used which is publicly available (http://www.inf.u-szeged.hu/~berendg/nlp_demos//demo).

This tool uses the *fasttext* Python package [15] to forecast the most suitable SIC code of a target company based upon its Web site. The reasonably priced commercial US database (https://www.uscompanieslist.com/; 299 USD for version 2020) which encompasses tens of millions of company entries and characteristics (such as contact details, website address and SIC) was purchased, then cleaned up with various heuristics and further used for training by the developers [4]. After the SIC

code prediction of the focus company, the tool automatically retrieves and ranks comparable enterprises of the same database according to their textual similarities and overlaps in companies' Web sites [4]. Pierre [22] showed that best classifier accuracy may be reached by using Web site keywords, metatags and body text as a source of text features. These Web site elements, particularly from the opening page, were processed to get an adequate coverage of the Web sites and identify inferences in unseen URLs within the model [4]. A multi-word expression detector was developed and trained, for which a fast conditional random field (CRF)-based sequence classification architecture was used [3] and then implemented with a highly efficient CRFsuite package [20].

In order to discover similar companies, the three globally well-known waste management companies used in the first approach of the systematic web search served as entry data for the tool. This way represents a type of expert knowledge infusion aiming at developing higher-quality results [8]. The discovery of potential companies was executed in the following way. First, the URL of each of the three waste management companies was inserted into the tool (step 1). As a result, the tool proposed ten similar companies for each of the three initial waste management enterprises. The resulting companies were then checked according to their fit to the firmographic criteria. The appropriate prospects were used as new input data, i.e. in the best case, 30 new inputs (step 2). This new input data were entered again in the tool with the outcome of a theoretical maximum of 300 potential companies. As the tool proposes the companies due to their similarity, multiple nominations occurred. Hence, multiple suggestions of identical companies were eliminated leading to a final list of 108 enterprises. In order to evaluate the quality, all companies were checked according to their firmographic characteristics and appropriateness. This research was conducted by the same research team as the one which carried out the systematic web search. However, it was executed at the very end of the entire benchmark to limit the influence on the first research approach.

2.4 Results and Discussion

Table 2.1 shows the results of various prospecting methods. In general, the inappropriateness of companies for being selected as high-quality prospects was assessed solely on the basis of their compliance with all pre-defined selection criteria. The

Table 1 Retrieved results of the three prospect searching methods

Method	Number of potential companies	Number of quality prospects
Systematic web search	94	94
Database search	134	103
Data mining tool	108	45

systematic web search was stopped after the available time quota of 110 h had been exceeded. At this point, the retrieved results were already quite redundant and the target of reaching 200 potential companies was foreseeable.

As the systematic web search was based on an individual evaluation of the companies selected by the researchers, the number of potential companies (94) equals the number of quality prospects. Inappropriate companies or Web sites were not further investigated as soon as this was detected. The results of the commercial database (134 potential companies) were the highest of all approaches. One hundred and three of those could be classified as quality prospects, which was owed to the high quality of the used database. Thirty-one entries were found with identical domain names representing affiliated companies. The prototypic data mining tool delivered the lowest number of results. 42% of the proposed companies fulfilled the requirements of a quality prospect. Sixty-three inappropriate firms either have their main business activities in a related but different field (e.g. plumbers, excavator rentals or boulder hauling) also offering some waste management services, or operating in a different sector with a market focus on the waste management industry (as tech-companies, agencies, etc.). One reason for this noise may be the training and modelling approach of the tool as only the opening page and no deeper Web site levels were processed for training and for identifying inferences in unseen URLs within the model [4]. Another explanation may be the applied step-by-step procedure combined with the characteristics of the underlying database. After the first step (i.e. the entry of the three starting waste management firms), still 55% of the 29 discovered companies were of good quality (one multiple nomination was excluded). However, as the outcome of step 2, an additional 50 inappropriate firms (= 63%) and 29 fitting prospects (= 37%) were proposed. Hence, this step-by-step approach leads to an increasing deviation from the initially retrieved companies.

When comparing the three approaches with each other, the rate of overlaps was analysed. Small overlaps would mean that the three methods could be complementarily used. Table 2.2 highlights overlaps between the used approaches. Multiple nominations of the same companies through the three methods are very rare. Only 14% of the prospects of the systematic web search were identical to the database search results. The overlaps between the results of the data mining tool and the

Table 2 Overlaps among the quality prospects of the three searching methods

Prospects of high quality from:	Are proposed also by:		are also registered in	
	Database search (%)	Data mining tool search (%)	Hoovers (D&B) (%)	Data mining tool database (%)
Systematic web search	14	11	86	18
Database search		2		23
Data mining tool search	2		6	

systematic web search were 11% and between the discovered database firms and the data mining tool were even lower at 2%. There were no overlaps of all three methods. Next, it was analysed whether companies are registered in the databases although they are not shown in the results. All companies proposed by systematic web search and the data mining tool method were checked if they are included in the Hoovers (D&B) database. The same procedure was done for the tool's database with the results of the other two methods. As Table 2.2 illustrates, the Hoovers (D&B) database covers most of the results of the systematic web search (86%), but only 64% of the tools' results. Concerning the size of the unregistered companies, it was realized that predominantly small to mid-sized firms are not included in the Hoovers (D&B) database. Registered but not proposed firms are either assigned to other industry codes (as SIC code 49530000—Refuse systems) or excluded because of the delimiting selection criteria in the research procedure. The examination of these registered but not suggested units revealed that errors in the database, such as incorrect (e.g. too small) number of employees, prevented potential candidates from being proposed by the system. The coverage rate of the data mining tool's underlying database is even lower. Only 18% of the detected companies through the web search method and 23% of the database search method are registered in the tool's database which may be explained by the relatively small size of the tool's database. The cleaning procedure, which encompassed the deletion of companies without or wrong URLs, led from an initial huge dataset (with more than 20 million registrations) to a final collection of 400 K registered corporations of all possible industries and sectors, i.e. around 2% of the original registered companies [4]. Many of these discovered companies are small—to mid-sized. This indicates that the characteristics of the 400 K registered corporations may differ compared to other database.

Finally, the time required for the three research methods to yield results was examined. As for the first method, the researchers monitored the time spent for identifying quality prospects. The systematic web search required 115 h (30 h for search engines research, 45 h for web search via magazines, journals and trade fairs and 40 h for web search linked to associations and platform approach). This is about 55 times more resource intensive than the search executed via the high-quality database (approach 2), which took 2 h. The search through the data mining tool took 2 h as well. However, the validation of the retrieved results from the tool encompassed 25 h, which is mainly due to the step-by-step procedure and the prototype character of the data mining instrument.

Comparing all results, no clear best method has been identified as all methods have their advantages and disadvantages. Despite the weaknesses of manual web search—simplistic rules, limited comprehension of complexity, being exhausting for the researchers or high expenditures in form of personnel costs [17, 19], this form of search produces good results—both in quantity and quality, if it is carried out in a structured and systematic way. The quality of these prospects, i.e. the fulfilment of all pre-defined selection criteria, could be determined relatively easily, as the number and complexity of the selection criteria were not too excessive. However, in many business areas where speed counts, the time involved is not conducive to achieving results. Furthermore, the comparison shows that with this method, there is always the

risk of omitting potential candidates, especially if the search is conducted under time constraints. The uncovered prospects, which were retrieved with the other methods, indicate this limitation.

Searches using high-quality commercial databases can lead to excellent results in terms of quantity and quality. Nevertheless, a search using commercial databases still has limitations. The definition of selection criteria remains with the researcher and as such induces a potential bias leading to too few or too many results. This bias is not present in the case of AI-based data mining solutions. However, the data mining solutions often need initial databases which enable further web crawling activities [8].

To sum up, a combination of data mining approaches that use freely accessible and high-quality commercial databases yields the best results in terms of quantity, quality and minimum resources used. If fee-based databases are not affordable, the use of several free databases in the web crawling process seems to be expedient [8]. However, the quality of the additional databases should be the focus, not the number of supplementary databases.

2.5   Contributions and Limitations

This contribution adds to the research stream of prospecting management. As D'Haen et al. [8] point out, the number of studies which test data mining methods for prospect qualification is limited in the academic literature. A real-life example allowed a comparison of the effectiveness and efficiency of different methods of prospect generation. Automated prospecting methods were found to be superior with regard to time efficiency and quantity of results compared with a manual approach, which is still very common in SMEs.

For managers, this comparison implies that systematic web search as well as the usage of commercial databases can lead to useful prospects with good quality. The decisive factor here remains a stringent and wise choice of selection criteria as well as a solid control for researcher bias. Since B2B sellers are often responsible for the definition and selection of these criteria and often rely on their intuition or simple rules [17], this can lead to an excessive number of results that cannot be processed further, especially when using databases. Conversely, it should be taken into consideration that databases never show a complete picture of the potential, since missing or incorrect datasets may be present. AI-based methods of data mining solutions help to alleviate the deficiencies of poor selection criteria or errors in the datasets since data of individual company web sites and their similarities are considered. Finally, this practical application shows how the prototype of the University of Szeged could be further developed.

Limitations of this study include the company-specific limiting approach of the search, the selection criteria used, the distortions caused by the search activities of the researchers and the prototype character of the data mining tool. At the same time, this study exemplifies prospecting approaches in B2B areas and the difficulties

associated with it. Although very limited in its generalization, this comparison also contributes to the quantification of the results of the methods as a practical example.

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Chapter 3
A Trademark Image Retrieval Tool Based on Deep Learning Features

Rubén Manrique and David Duque-Arias

Abstract In this work, we present the advances in the construction of a trademark image retrieval system using machine learning techniques. This application will be used as a tool by a government entity to identify potential similar trademark images. The similarity is computed via two different types of features: color-based and deep-based features. Furthermore, we included the Pantone color scale as a proxy to identify relevant colors in the image. The algorithm was evaluated using a subset of 5000 images from LLD—Large Logo Dataset (Sage et al., LLD - large logo dataset - version 0.1 [1]), and a ground truth obtained from two surveys applied to users. Based on the NDCG metric, promising results were obtained that validate the set of proposed features.

3.1 Introduction

The implementation of effective marketing strategies is the means that allows the valorization of a brand in the market. Each step in the consolidation of this goal is achieved, among other things, with the control and surveillance of industrial property assets, both its own and those of third parties. In the first instance, Decision 486 of the Andean Community of Nations, establishes in its article 136, literal *a*: "The impossibility of registering as a trademark those signs whose use in commerce unduly affects a third party's right, particularly when they are identical or resemble a trademark previously requested for registration or registered by a third party." Assessing compliance with this condition implies the implementation of trademark validation processes. The purpose of this exercise is to analyze the similarities of

R. Manrique and D. Duque-Arias—Both authors contributed equally.

R. Manrique (✉)
Universidad Sergio Arboleda, Bogota, Colombia
e-mail: ruben.manrique@usa.edu.co

D. Duque-Arias
PSL Research University, Paris, France

the signs to be registered, considering the written, conceptual, phonetic, and graphic dimensions, thus avoiding mistaken associations regarding the origin or provenance of the products or services that they are offered in the market. Government managers and examiners, even the applicants themselves, have the responsibility to analyze the strict compliance with the industrial property regulations.

A key step in trademark validation processes is the search process to identify potentially "similar" marks to those previously registered. This search is carried out in the so-called trademark databases that usually contain hundreds of thousands of registered trademarks [2]. The growing demand for intellectual property titles and trademark registration requests becomes a challenge for examiners in charge of these processes. According to WIPO, for example, in 2016 more than 7 million trademark validation applications were made [3]. In Colombia, the Superintendency of Industry and Commerce reported more than 187,000 trademark registration applications between January 2014 and January 2020. With the constant increase in trademarks and trademark registration requests, it is increasingly complex—if not impossible—for an examiner without the help of intelligent search tools to determine whether or not third-party rights are being violated [2]. The volume of information to be examined is one of the challenges in the trademark validation processes of the future. Although there are trademark search tools that allow a narrower and more precise group of potentially similar brands to be reduced, these tools are in most cases rudimentary [4].

Most trademarks can be broken down into nominative (i.e., text) and figurative (i.e., images) elements. Existing trademark search engines point to one of these types of elements individually, in a limited way, and without considering the interrelationships between them. At the nominal level, trademark search engines carry out a merely lexical analysis; that is, they are based on the coincidence between the terms that make up the text. As a result, multiple queries are made by examiners looking for each of the brand terms and their possible combinations. More importantly, the semantics and phonetics associated with the terms are not considered in the similarity analysis. The problem is exacerbated when the search objects are images. Trademark images do not follow standard typologies, and their diversity is so high that traditional methods (i.e., without machine learning) often fail. Verification processes require analyzing colors, shapes, and semantics at reasonable times.

In this work, we focus on figurative trademarks and present a Trademark Image Retrieval (TIR) system that employs machine learning techniques. It is expected to be used as a tool by a government entity to evaluate if the copyright of already registered trademark images is respected by a new candidate image. The problem we are addressing here is, therefore, finding images potentially similar to an input query image. Our proposal to calculated image similarity is based on two different types of features: color-based and deep-based features. We reported results using a database composed of 5.000 logos from LLD—Large Logo Dataset [1] and a ground truth of human similarity perceptions constructed through user surveys. The structure of the paper is described as follows: in Section 3.2, some related works with IR and CBIR are presented; in Sect. 3.3 is described the proposed application; in Section 3.4 is

detailed the experimental setup; Section 3.5 presents the results of image similarity in a public dataset; Section 3.6 describes the analysis of obtained results. Finally, in Sect. 3.7, the conclusions are presented.

3.2   Related Works

Image retrieval (IR) and content-based image retrieval (CBIR) [5] are challenging tasks that are an active research domain in image processing. The main objective is to identify most similar images according to several criteria such as color, texture, shape, spatial layout, and faces [6]. As stated by [7], the most important part in IR is to build a robust *image representation* with relevant and discriminant features. Initially, most of the algorithms with the highest performance in CBIR and IR were based on hand crafted features [8, 9] such as eigenvectors [10], color and texture [11], gradients and wavelets [12]. Even though, this approaches rely on "low level features" that are far away from high human-level perceptions. After the boom of deep learning (DL) in 2010s decade, it has demonstrated to be an useful approach that outperform already existing techniques in a vast domain of areas including image processing, speech recognition, and natural language processing [13]. One of the keys of its success is related to the capability to learn hierarchical and nonlinear representations of the data.

In image processing, a well-known strategy is to take advantage of already learned DL models to perform a new task. This approach is known as transfer learning and have obtained impressive results in several types of machine learning applications [14, 15]. In the case of IR tasks, several works have demonstrated that using an already trained model allows to extract features of new data and build a reliable image representation [16, 17]. This occurs thanks to the use of enormous datasets such as ImageNet, composed by thousands of millions of images. Even though, as stated by [7], it may be required to perform domain adaptation [18] to accomplish a new task. One of the works that have demonstrated to be robust enough to extract features from images at different scales is Regional Maximum Activation Convolutions (R-MAC) [19]. The main idea is to use an already trained model and build a compact descriptor for each image. The construction of a low-dimensional features vector implies that selected features will represent only the most relevant characteristics of the image, in the same spirit of DL autoencoders.

3.3   Methodology

We developed a tool to evaluate image similarity between a new trademark image and a set of already registered images. In Fig. 3.1 is presented a simplified diagram of our application, that computes a score of similarity between a new image and a set of images. The proposed application is mainly divided in two steps: **(1)** feature extraction and **(2)** similarity metric.
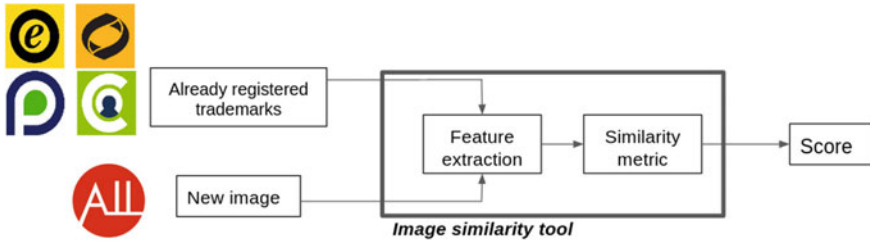
Fig. 3.1 Simplified diagram of proposed trademark image retrieval tool

3.3.1   Feature Extraction

The proposed application was developed as a tool to compute similarities in trademark images. In order to identify them from different perspectives, we propose to extract features of images following two independent paths: using color information and a deep learning-based approach.

Color Features In TIR, color is one of the most relevant components of an image that must be evaluated. In our case, we are interested in identifying if a new trademark image is composed by colors that have already been registered by other trademarks. In order to identify them, we decided to work with RGB color space and compute a set of features based on histograms. The representation of a color image as a set of three single histograms allows to estimate the probabilistic distribution of gray levels by channel. Additionally, this kind of features is characterized by being invariant to rotation and scale.

In Fig. 3.2 is presented an example of color histograms of a single color image. The x-axis of each histogram indicates the intensity of the color, and the y-axis indicates how many pixels (frequency) in the image have the same intensity. One may note how the trademark image is mainly composed by two colors: yellow and black. In RGB color space, every color can be represented as the combination of red, green, and blue. For example, yellow is represented as a combination of high intensity values of red and green, and black is obtained with low intensity values in the three channels.

We computed three features by channel: *mean, standard deviation* and *skewness* [20] (**9 in total by image**). We remark that even if the features from histograms can be extended, we identified that our main interest of evaluating color similarity was to preserve the comprehension and understanding of computed values. In the section "Deep features," we present a set of more robust and hierarchical features that are the core of our application.

Pantone Color Scale One of the design requirements of the developed tool was to identify the presence of colors from Pantone scale [21] in the images. We highlight that this color scale is used as a largely standardized system for printing. Additionally, it is mainly used in a variety of industries such as graphic design and product design. In our application, we evaluate the presence of solid coated Pantone colors composed by
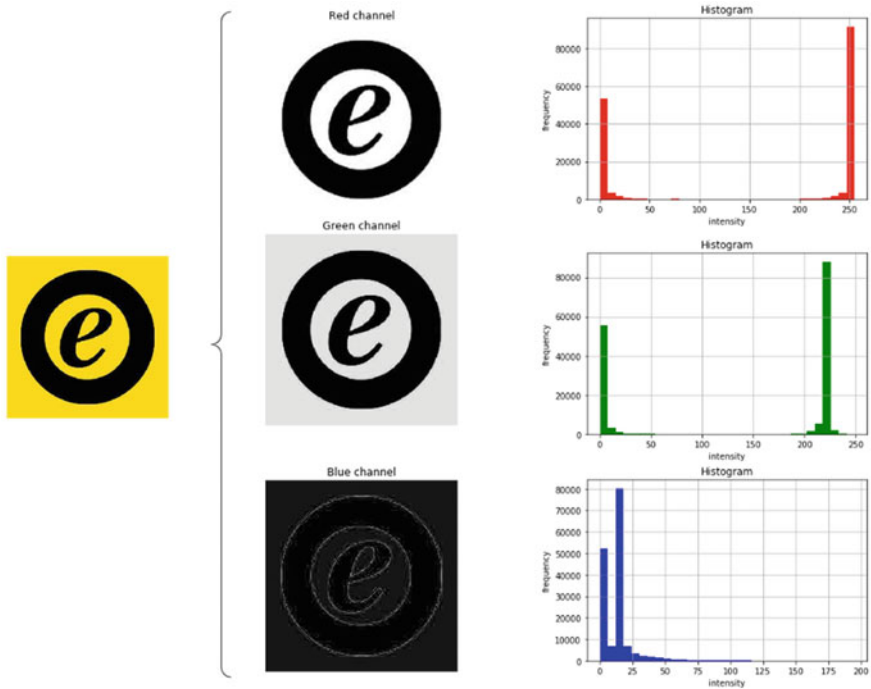
Fig. 3.2 Histograms of a color image

Fig. 3.3 Mapping RGB image into Pantone color scale
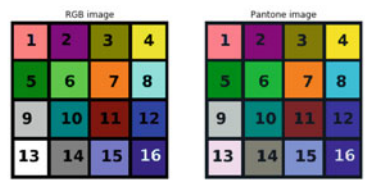
(a) Original RGB image (b) Image in Pantone color scale

1.761 elements in trademark images. We performed several experiments to represent RGB images based on Pantone color scale, but spectral diversity was dramatically reduced. As a manner of example, we present in Fig. 3.3 a conversion of a synthetic RGB image to the Pantone color scale. In this case, we mapped every RGB color using "most similar" Pantone color by Euclidean distance. It can be seen that in some of the regions of Fig. 3.3b such as 6, 8, 12, 13, and 15, there are visually identifiable differences with respect to the original Fig. 3.3a.

We experimentally found that reducing spectral diversity would lead to undesired similarities specially in bright colors. While the RGB color space is composed by 256^3 combinations, solid-coated Pantone is composed only by 1761. From the above, we decided to identify the Pantone colors in the image and return them as a list to the final user.

Deep Features In this work, we performed feature extraction using the proposed approach by R-MAC [19]. This technique is mainly divided in two steps:

- Extract features from images with a backbone network such as VGG16 [22], using the weights from an already trained model.
- Compute most relevant features by region using a max pooling approach. This step builds a concrete and low-dimensional image representation: typically 256 or 512.

In our case, we worked with the weights of the model trained with ImageNet. We computed features at 14 scales by image, and we experimentally found that using a vector composed by 512 elements by image allows to build a robust image representation.

3.3.2 Similarity Metric

After the calculation of color features and deep features, it was required to compute a metric to evaluate the similarity between the images in feature space. At this point of the workflow, each color image is represented by two feature vectors: 9 color features and 512 deep features.

Several approaches have been proposed to evaluate the similarity of vectors. In particular, in CBIR, some of the metrics that have demonstrated better performance are Cosine angle distance (CAD) and Euclidean distance (EUD) [23]. Results of both measures in high-dimensional vectors are very similar. In this work, we implemented and we vectorized them in order to reduce computational cost of the algorithm.

3.4 Experimental Setup

We randomly selected 5.000 logos from LLD—Large Logo Dataset [1] composed by almost 130.000 trademark images. First, we extracted features offline. Then, we stored them in two matrix: color features ($MC_{9\times5000}$) and deep features ($MC_{512\times5000}$). The feature extraction stage was performed in a local station with an Intel Xeon E-2186G processor and 32 GB of RAM without graphics card. It took around 0.6 s the feature extraction by image. We used Keras 2.2.4 and Tensorflow 1.12.0. In order to perform a quantitative analysis of the application, we applied two surveys to evaluate image similarity using color features and deep features. We followed the same strategy in both surveys: we took 20 images and for each image, we computed

the five most similar logos from the dataset composed by 5.000 elements. Then, the five closest samples are randomly ordered and presented to the user. For each image, the user gave a score with an *integer* between 1 and 4 (1: not similar at all and 4: very similar) to evaluate the similarity against the query image.[1] We highlight that the surveys allow us to evaluate the pertinence of the most similar images obtained using our algorithm with respect to human similarity criteria.

3.5 Results

We performed two different experiments to evaluate the robustness of the algorithm: The first was carried out to evaluate the similarity of images using color and deep features independently. And the second one, to visualize some cases of manually modified images (we call them "corrupted samples") and their similarity with original images.

3.5.1 Similarity

The evaluation of similarity and its correctness is a subjective problem that strongly depends of the selected criteria to compare them. In order to evaluate multiple scenarios and several types of images, we randomly chose 100 images of the database and computed the 5 closest images using CAD.[2]

   We applied the surveys to 75 users, (43 for color features and 32 for deep features) in order to quantitatively evaluate the similarity of the five most similar images in 20 different cases. We computed the average similarity given by the users by query image in order to compare what features were able to find most similar images. In Table 3.1 are presented obtained results. One can observe that in 14 of 20 query images, users gave a higher similarity score to retrieved images with deep features.

   Furthermore, from the survey responses, we evaluated the pertinence of *top-5* results using Normalized Discounted Cumulative Gains (NDCG) [24] and computed independently by survey. We calculated the average similarity by image from the score by the users. Then, we computed NDCG for each of 20 images. In Table 3.2, we present the average NDCG and standard deviation by survey. We highlight that in order to have comparable results between all images, we fixed the "ground truth" relevance vector for all images as follows: $V = [4, 3, 3, 3, 2]$

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[1]Applied surveys are available to be consulted https://cutt.ly/guNWVke.

[2]Results are available to be consulted https://cutt.ly/AuBGXXb.

Table 3.1 Average survey responses comparison for first 10 query images

Query	Q_1	Q_2	Q_3	Q_4	Q_5	Q_6	Q_7	Q_8	Q_9	Q_{10}
Color	**1.590**	1.646	**1.576**	1.893	1.446	2.372	1.665	1.288	1.525	**2.441**
Deep	1.443	**1.787**	1.456	**2.237**	**1.512**	**2.806**	**1.693**	**1.312**	**1.731**	1.706
Query	Q_{11}	Q_{12}	Q_{13}	Q_{14}	Q_{15}	Q_{16}	Q_{17}	Q_{18}	Q_{19}	Q_{20}
Color	1.530	1.730	**1.762**	1.697	**1.734**	1.632	1.316	**2.144**	1.790	2.004
Deep	**1.987**	**2.012**	1.650	**1.700**	1.643	**1.750**	**1.562**	1.825	**2.675**	**2.568**
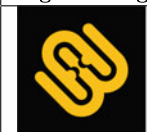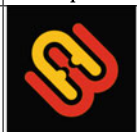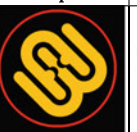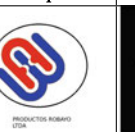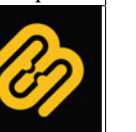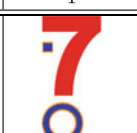
Table 3.2 Average NDCG by feature type

Features	NDCG
Color	0.5612 ± 0.0961
Deep	**0.5965 ± 0.1298**

3.5.2 Corrupted Samples

As second experiment, we performed some modifications in existing logos and eval-
uated the similarity of these "corrupted samples" using deep features. The main goal
was to identify if the proposed model is robust enough to detect some malicious
variations of already registered trademark logos. In Table 3.3, we present the results
with three logos manually modified four times changing colors and/or including
shapes and/or text. The row "position" indicates the index of the original image after
computing similarity between corrupted sample and all the images in the dataset.

Table 3.3 Image similarity of corrupted logos

3.6 Analysis

From obtained results, we identified that the proposed algorithm allows to measure similarity between images based on two different approaches: color features and deep features. The first is able to extract relevant information based on the spectrum of the images, and it will be useful for final users that are interested in identify if a new candidate image contains some already registered colors. The second seeks to represent more abstract patterns of images such as shapes and component distributions. This set of features are even able to identify a partial presence of an already registered trademark in a new candidate image, as shown in Sect. 3.5.2.

We remark that the evaluation of trademarks similarity is a complex and highly subjective task. This was evident in the results of the surveys. We observed that in most of the cases, there was not a consensus to determine the grade similarity of images. It demonstrates that the development of this kind of application may be an useful tool for unify and quantify the similarity at different levels.

In relation to calculated NDCG, we find out that deep features slightly allows to retrieve images that are visually more similar than color features. It is explained because these features are a hierarchical representation of the image that take into account shape and components distribution. Even though, we notice that the selected metric evaluates the performance based only in the *n-top* similar images and not in the whole dataset. In our case, we arbitrary selected $n = 5$ to show a reduced number of samples in the surveys, and the whole dataset was composed by 5.000 images. We remark that the evaluation of this kind of algorithms working with fully non-annotated data is a challenging task. This is an active domain of research in information retrieval tasks.

3.7 Conclusions

Trademark database search systems that employ AI have been effective in reducing the space of registered trademarks only to those in which there could be a potential conflict of interest either due to the similarity of their figurative or nominal elements. With fewer results to analyze, time of the trademark evaluation process required by specialists can be reduced.

In this paper, we focus on the retrieval of similar figurative (i.e., images) trademarks. Our strategy to measure image similarity was using color features and deep features. Obtained qualitative results demonstrate that the proposed method allows us to find visually similar images. Additionally, as it is presented in Sect. 3.5.2, the proposed tool is robust enough to compute similarity even if the original image is corrupted by color and text variations.

In future work, we will include an additional step to the workflow presented in Fig. 1 to automatically find regions of interest before feature extraction. Furthermore, we will include additional invariant to rotation descriptors of the image. Although

in this work we focus on images, a trademark also contains nominative aspects that are subject to validation. Combining the figurative and nominative aspects of a mark into a unified similarity metric is also in our future work.

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Chapter 4
The Impact of TikTok on Digital Marketing

Teresa Guarda ⓘ**, Maria Fernanda Augusto** ⓘ**, José Avelino Victor** ⓘ**, Luis Miguel Mazón** ⓘ**, Isabel Lopes** ⓘ**, and Pedro Oliveira** ⓘ

Abstract Social media currently has a high number of users, resulting in changes in behavior and relationships between companies, consumers and followers. With this, the number of companies adhering to digital marketing strategies grows significantly, resulting in greater attention from brands for this medium, as it is through it that the company and its positioning can be presented, or even develop a relationship with consumer. The latest revolution in social media is called TikTok. Its success is due to the fact that the application has a touch of creativity and self-expression and also a touch of digital marketing. Not only does it offer you to upload your own videos and then edit it with a variety of themes, but possibly create a collaboration with another

T. Guarda (✉)
Universidad de Las Fuerzas Armadas, Salinas, Ecuador
e-mail: tguarda@gmail.com

T. Guarda · M. F. Augusto · L. M. Mazón
Universidad Estatal Península de Santa Elena, La Libertad, Ecuador
e-mail: mfg.augusto@gmail.com

L. M. Mazón
e-mail: luismazon86@gmail.com

CIST–Centro de Investigación En Sistemas Y Telecomunicaciones, Universidad Estatal Península de Santa Elena, La Libertad, Ecuador

T. Guarda · I. Lopes · P. Oliveira
Algoritmi Centre, Minho University, Guimarães, Portugal

T. Guarda · M. F. Augusto · L. M. Mazón
BiTrum Research Group, León, Spain

J. A. Victor
Polytechnic Institute of Maia, Maia, Portugal
e-mail: javemor@ismai.pt

I. Lopes · P. Oliveira
Polytechnic Institute of Bragança, Bragança, Portugal
e-mail: isalopes@ipb.pt

P. Oliveira
e-mail: pedrooli@ipb.pt

user. The purpose of this work is to analyze the rapid growth of TikTok, to find out what factors have given rise to this growth and the impact in digital marketing.

4.1   Introduction

Social networks have changed the way in which people communicate and consequently, the communication of brands. The great growth that this medium is experiencing is due to its effectiveness, since it allows you to interact with the public and empathize with them.

Currently, the number of brands advertising on these platforms is increasing, with Instagram being the favorite. But the environment of the advertising sector is constantly changing and evolving. What is trending today may not be tomorrow and brands must be aware of it.

TikTok was launched in 2016, and it is an absolute success on the Internet; in 2019, it exceeded 1.5 billion downloads, surpassing Instagram and joining the list of the most downloaded applications of the decade [1].

TikTok is the fastest growing today social network, and the application is the fourth most downloaded in the world and has about 500 million daily active users, behind only more consolidated social networks, such as Facebook, YouTube and Instagram. The app has a main objective the sharing of short videos by its users [2, 3].

The apps are currently the one with the highest number of downloads in the world [4] and that generated a red alert on other social networks, leading some of them to bring updates with the same functionality provided by TikTok.

The objective of this research will be to analyze the growth of the three media that present the best characteristics to invest in digital marketing: Facebook, Instagram and TikTok, to find out what factors have given rise to this growth and the impact in digital marketing.

The social media currently have a high number of users resulting in changes in behavior and relationships between companies, consumers and followers. As is the case, or number of companies that are adept at digital marketing strategies, it grows expressively, resulting in the greatest attention to brands for this purpose, through which it can be presented to a company with positioning, or at least how to develop a relationship with consumers.

4.2   Social Media Marketing

Currently, social media marketing (SMM) is one of the fastest growing segments in the world. This is a path with no return in terms of online marketing trends; then, companies must to adapt their strategy to this new scenario.

Social media marketing is the strategy by which is possible to use the main social networks as tools for promoting a brand, products, or services. Certainly, it's possible to use this channel for several other actions, such as creating a customer service channel; but in this case, the main objective is to promote products and services.

SMM is classified in the display marketing category, which works very differently from other channels, such as search marketing category. Companies must adapt to these conceptual differences in order not to fall into the trap of turning their profiles into simple promo murals, without interactivity and targeted message [5]. Another characteristic of social media marketing is the fact that it also works as relationship marketing [6], where the main objective is to create a point of contact with your potential customers, and it is only after the creation of these relationship bonds that one starts to take more incisive actions.

Social networks are another channel of dissemination to be used, and therefore, it must be properly evaluated and contextualized in the general panorama of the digital marketing strategy of companies. The great advantage of this channel is that it provides a chance to get closer to the target audience, in a more personal, directed and segmented way, allowing companies to get closer to consumers more effectively and get to know their needs and desires more directly and facilitating the creation of more efficient strategies for brand promotion.

The trend of bringing consumers closer and creating relationship bonds in modern digital marketing found social networks as the ideal channel for creating these points of contact [7]. For this reason, the number of companies that seek social media to promote their products and services is increasing.

The objective of marketing is to develop strategies that make the company generate profits. This ensures the company health. The objective of marketing is to develop strategies that make the company generate profits, that will ensure the company's health. For that, it is necessary to learn how to make an appropriate strategy, and SMM strategy cannot be based only on promotional messages, but also on creating relationship bonds and trust, to move to the dissemination phase. The great advantage of promoting on the Internet is that it gives a chance to get closer to the target audience, in a more personal, directed, and segmented way.

One point to keep in mind is that a marketing strategy on social networks requires a maturation period, and for this reason, it is considered a medium- and long-term action, since relationships are not created overnight [8]. Thus, it is necessary to have a detailed planning of the strategy to be adopted and be prepared for a lot of work, because the production of relevant content and interaction is an essential requirement in this area. When creating a strategy or campaign, in which customers or the target audience can misinterpret it, the possibility of having a negative impact on business is high.

4.3   TikTok

TikTok is a social network born in China in 2016. At first, it was baptized Duoyin and its purpose was to allow to practice languages. Since its users were mainly teenagers, they began to change its use, and entertainment became their goal. From then, this rapid growth led to a new worldwide re-launch under the name TikTok [2].

TikTok app is based on the concept of short format video, offering users a wide selection of sounds and pieces of music, as well as the option to add special effects and filters. It also provides an option to directly add videos created on your phone; a reaction feature, which allows users to record their reactions to other videos and share; and also a digital wellness feature that sends an alert when users spend more than two hours on the app.

Since its launch, the application's popularity has grown a lot. In October 2018, TikTok was the most downloaded photo and video app in the Apple store worldwide. The application has accumulated more than 500 million active users, with the USA being the most popular country in which it was downloaded, with more than 80 million downloads [1].

There are several factors that have led to the increase in the popularity of Apps, particularly: easy use; sponsoring celebrities; and focus on localized content. TikTok simplified the creation and sharing of videos [9]. All that users need to do is to record everything they want in their daily routines and publish them instantly. Due to the short format, neither the video creation nor the viewing process takes much time or effort. In addition, this short video content is played as soon as the user opens the apps. The videos start playing one by one, and the viewer gets lost in a sea of content with funny and addictive videos. Due to the addictive nature of the content type, it is very easy for watching random videos for hours.

The apps also use hashtags from local trends to suggest topics for creating content for its users, helping to capitalize on local trends and generate viral content for the platform. TikTok sends personalized recommendations to each of its users. This ensures that users are always up to date on the latest videos and never stop having ideas for creating videos. Using these techniques, TikTok was able to obtain localization on a global scale.

Partnerships with celebrities have been an essential tactic in the strategy of geographic expansion of TikTok. The apps use celebrities and influencers to move the platform and generate viral content [10]. These celebrities not only publish content on TikTok, but also promote TikTok on other social media channels. Another determining factor in the popularity of TikTok is the fact that, despite being a global application, it has a strong focus on localized content. The app usually runs local contests and challenges and captures local trends through the use of localized hashtags. TikTok is running "1 million auditions" competition separately in several countries. For each, participants are given themes to create videos, and then, the top video creators are awarded. This contest not only leads to the creation of thousands of local videos for each country where it takes place, but it also helps TikTok creators to gain recognition and followers.

The current popularity of TikTok is surprising, but it still does not guarantee that the app will reach the levels reached by other social networks like Instagram and YouTube. To maintain its current popularity, TikTok will need to innovate and find new ways to engage its user base. It will also have to make the platform more favorable to marketing for brands in order to establish the application as a social network that will remain.

4.3.1 The Audience

TikTok has become a social phenomenon, and it is the sixth social network in the world, with more than double active Twitter users, and the third, if we remove WhatsApp, Facebook Messenger, and Weixin/WaChat chats [3] (Fig. 4.1).

The popularity of TikTok is largely driven by young generation Z, since 41% of users are between 16 and 24 years old. The platform also makes room for actions with influencers since 72% of its users follow some influencer in the app, and 38% of users trust in celebrity recommendations [4, 3, 11].

TikTok was the worldwide most popular social networks at April 2020. According to Apptrace, the TikTok app is currently available in 154 countries and available in 75 different languages, being in the top 25 in 135 of those countries (Fig. 4.2).

TikTok has about 800 million monthly active users. The apps have been downloaded more than 2 billion times worldwide, as reported by SensorTower on March, 2020 [4]. Of these, 32% comes from Asia Pacific region, 12% from North America, 11% from Middle East and Africa, 10% from Latin America and 10% from Europe, being 55% female users and 45% male users [12].
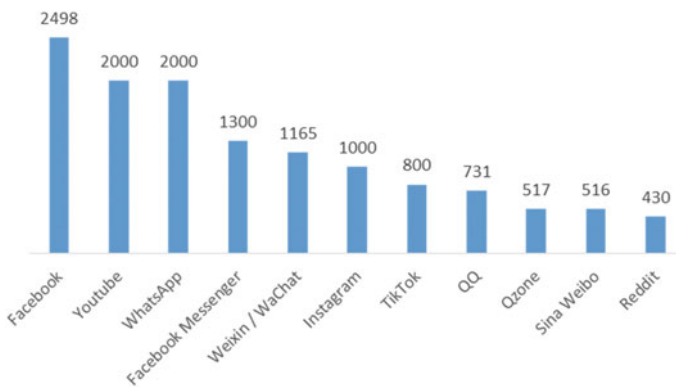
Fig. 4.1 Most popular social networks worldwide at April 2020, ranked by number of active users (in millions) (adapted from Statista [3])
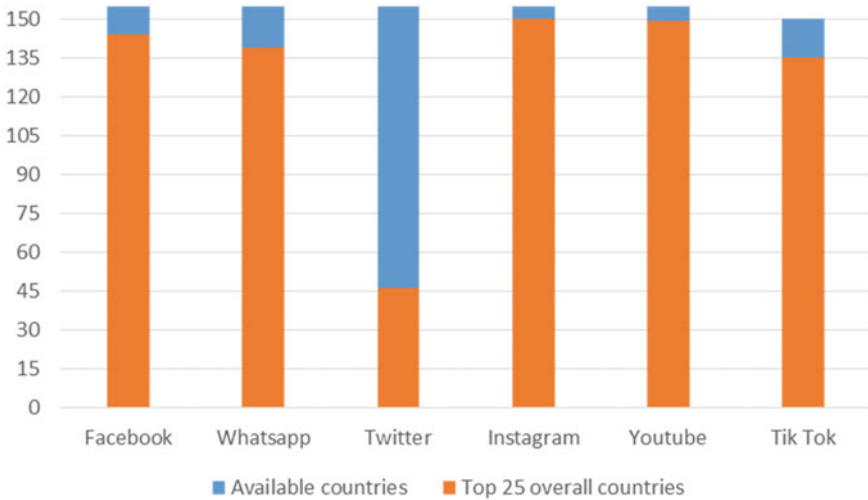
Fig. 4.2 Most popular social networks worldwide at April 2020, ranked by number of active users in millions (adapted from Apptrace [11])

4.3.2 Influencers

Generally, companies adopt different strategies to get closer to their target audience; one of which is the partnership with digital influencers or influencers.

As on Instagram, there is also the possibility of hiring influencers. The way of advertising is different since you cannot carry out direct sales campaigns. The brands are shown within the videos in a more creative way and without making it explicit that it is an ad [13].

Do Brands need Influencers, or the reverse? New opinions and reliable voices are essential for consumers to make their purchasing decisions. This created a great opportunity for influencers and companies to come together and create authentic connections with the public [14].

TikToker is the name given to the digital influencers of TikTok, who are already a profession in the social media market [15]. With paid posts, users of the short video app are able to make money from advertising and encourage purchases among potential consumers who follow them.

Influencer campaigns carried out on this social network tend to be highly successful. For example, the movie "The House with a Clock in Its Wall" ran a campaign that went viral, and all this due to the great popularity of several users of the platform that shared videos of the film with reviews included.

The influencers have thousands or thousands of followers, and these celebrities on the platform are only sought by major brands to publicize their products. But, for that, they must have an identification with the company's target audience and product.

4.3.3   Ad Campaigns

Within the TikTok social network, several objectives and payment models can be established when launching advertising, such as cost per click; cost per thousand impressions; and cost per view. TikTok offers age, gender and geographic targeting. Soon, interest and behavior targeting will be available too.

There are many ad opportunities for brands that want to get in front of users before in-app ads get too productive, and the user base gets tired. TikTok offers some ad campaigns [16]:

- **Biddable ads** is the most traditional and consists of native ads published in the user's feed, just as it is done with other social networks. They are the ads of a lifetime (of a lifetime in social networks to be more precise), those that appear in the user's feed. These videos take you to a URL or an app. They are called "biddable" because they can be configured by dynamic bids and according to advertising spaces: CPC (cost per click) CPM (cost per thousand impressions); and CPV (cost per view). For now, the segmentation of this type of campaign is quite limited and allows targeting advertising by location, age and gender. The metrics used are impressions, clicks, view time and interactions. It is more accessible than the campaigns we have seen so far due to its relatively low cost.
- **Brand Takeover** is a format released in 2019 and appears at the time of using advertising for the first time, and creativity takes up all the device's display. This creativity can be static or animated, and it can promote an app profile or contain an external link to a Web application. The metric applied to these advertisements is for impressions, clicks and visualizations. The coast of this type of impactful tan bells, according to Adweek, could reach prices between 50 thousand and 100 thousand dollars.
- **Hashtag Challenge** is an advertising option that could be promoted organically by the brand or through influencers. It is very simple and dynamic, and it consists in challenging users to create and upload content with the use of the label. If sponsored by any company, the advertising will enjoy a banner with instructions for the challenge. The metrics used are: display and clicks of the banner, number of videos generated and their interaction with users. Sponsoring a hashtag can cost between $ 100,000 and $ 200,000.
- **Branded Lenses** is the publication of sponsored filters, similar to those existing on Snapchat and Instagram. For the time being, we do not have exact information about the price and its operation, but not seeing the prices of the rest of the campaigns, it must be very economical. So, it has a very important potential for engagement and virality.

4.4 TikTok and Competition

One of the most important attributes of TikTok is the use of artificial intelligence. The application uses it in two ways. From the perspective of the viewer user, the technology analyzes individual preferences taking into account the likes, comments and content display time [17]. This information offers personalized video suggestions. And, from the perspective of the content creator user, artificial intelligence helps shared videos get thousands of views. The algorithm makes video editing easier and suggests music, filters and hashtags based on posts that are trending at the time.

With the arrival of TikTok, the main social networks were aware of what this platform could present at risk. The main social networks, Facebook, Instagram and YouTube have different models for sharing content. We will analyze the way in which TikTok differs from these social networks.

4.4.1 TikTok Versus Intagram

Instagram is still a favorite for many brands and influencers. But TikTok offers its users something that Instagram does not. As the focus of the network is to create short videos to be shared with followers and other users, the platform allows the person to use all their creativity. Whether through filters or challenges, TikTok also manages to hold the attention of its community, which spends the day searching and watching the most different types of content.

4.4.2 TikTok Versus Facebook

Facebook is regarded as the grandfather of social networks, Facebook remains present in much of the world. Despite being constantly evolving, the network feels threatened by TikTok. That is because the network has a simplicity and is able to make videos go viral in minutes. In addition, the short video platform is able to reach an audience that Facebook cannot attract interest in, which is the generation

4.4.3 TikTok Versus Youtube

YouTube emerged in 2005 with the main purpose of sharing content in video format. Currently, the platform allows videos of up to 30 min, in addition to lives. The purpose of TikTok is for videos to be up to 15 s long and for users to be able to engage with them. That way it is possible to consume content more quickly.

4.4.4   The Impact in Digital Marketing

Marketing specialists see the app as a gold mine because it is in a phase of expansion that makes it very accessible and because it has higher engagement rates with its users than we have seen so far.

Corporations like CNN and the Washington Post occupy large spaces to promote TikTok videos as viral products. Brands like Nike and Apple Music have TikTok accounts and are creating content. Consolidated brands like Guess have already experienced campaign development on TikTok. Such is the case of #InMyDenim, which went viral. Chipotle, the fast food chain, employed influencers to promote the #ChipotleLidFlip challenge. The challenge was a sensation, and it consisted of the user trying to turn the Chipotle lid. Universal Pictures used the network to promote "The House with a Clock in its Walls" film that premiered in September 2019.

Another example of how the social network serves various brands is that of the BBC television channel that together with 14-year-old twins Max and Harvey Mills with 6 million followers on TikTok, launched the CBBC children's space. McDonald's also used TikTok for the #BigMacTikTok Challenge in Malaysia. Super Bowl is announced with animated stickers from the National Football League (NFL). MTV had the app to broadcast the MTV European Music Awards.

4.5   Conclusions

Marketing campaigns on social networks make use of the tools offered by networks such as Facebook, Instagram, Twitter, TikTok and others, depending on the case and the company's operating segment.

TikTok is the social network of the moment. Even not having an account on the platform, we can still be reached by your videos. Many influencers use the network to produce certain content and then share it on other platforms.

With more and more brands looking for TikTok to further expand their reach of social media marketing, the app is on the right pathway, and if it can capitalize on brand activities in the app, TikTok will certainly grow even more and may even compete with the most popular social media platforms.

The app also has the potential to become the next big platform for marketing and social networking. However, it remains to be seen how the app's creators tap into this potential and maintain the app's current popularity.

TikTok uses artificial intelligence from the perspective of the viewer, analyzing individual preferences, and from the perspective of the content creator, predicting individual needs and wants.

No one can say whether or not TikTok will become permanent in the world of social media, and there is no doubt that it is currently prominent.

No other social media app has seen such wide and rapid growth, and the others competing social media platforms are losing out on their potential audience or audience, which is gravitating toward TikTok, as are big brands and big organizations.

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Chapter 5
Sentiment Analysis Using Web-Based Platforms on Virtual Education During the 2020 Lockdown

Alexandre Ruco ⓘ**, Khatia Vakhtanguri** ⓘ**, Elina Ghazaryan** ⓘ**, and Isabel Pedrosa** ⓘ

Abstract Three significant features of digital transformation are present in the evolution of sentiment analysis: the massive production of content by users; advances in machine learning; and the development of analytical techniques that allow decision making to be increasingly driven by data. Content produced on a large scale, mainly in social media, provides samples for the understanding of behavior, preferences, intentions, and opinions; the classification algorithms execute data processing quickly and accurately; interrelated and contextualized information favors the insights that support decision making. This work uses as an example the analysis of the impacts of the lockdown occurred in 2020 on feelings related to virtual education, to present a scheme for sentiment analysis based on Web platforms, configurable from graphical interfaces, which makes the application of the methodology accessible even to medium-sized organizations, which can use it to increase their positions in the competitive market.

5.1 Introduction

As an effect of digital transformation, the growing variety of digital services [1], people's perceptions, influences, and motivations, and the way they behave in the virtual environment, cannot even be fully understood throw the traditional surveys.

A. Ruco (✉) · K. Vakhtanguri · E. Ghazaryan
Polytechnic of Coimbra, Coimbra, Portugal
e-mail: a2019104309@alumni.iscac.pt

K. Vakhtanguri
e-mail: a2019157192@alumni.iscac.pt

E. Ghazaryan
e-mail: a2019103252@alumni.iscac.pt

I. Pedrosa
Coimbra Business School, ISCAC, Polytechnic of Coimbra, Coimbra, Portugal
e-mail: ipedrosa@iscac.pt

Instituto Universitário de Lisboa (ISCTE-IUL) ISTAR-IUL, Lisbon, Portugal

The adoption of computational techniques such sentiment analysis (SA) can produce significant benefits [2].

In this paper, we present an SA model that can be applied by students and professionals, to understand the impact of specific events, reactions, or effects of marketing efforts, through a data-cycle created to provide information about sentiments expressed by target groups. This analysis can be made just milliseconds after the content being published on social media, supporting real-time decisions.

After a fast growth of academic interest in the early 2010s, sentiment analysis faced some challenges that make the technique limited to information and technology researchers, despite its potential as a marketing tool. At least two of these challenges are today more likely to be overcome: the expensiveness and time consumption of development processes, and the difficulty of analyzing text from Internet posts, given that they are often short versions of words and phrases [3].

Thanks to the online platforms, SA is now a technique affordable and easy to use. With the advance of hybrid machine learning models, with algorithms being "trained" by humans, the machine is no more supposed to find a connection between a regular word and its short version. The difference between actual words and its short versions that usually appear on social media posts became less relevant. Real people classify different texts, and then train algorithms to analyze extracted lexical features from the text and tag each word with the sentiment associated with the whole text. This training step allows the algorithm to classify entire texts based on the sentiment associated with its lexical features, considering its relevance to the text structure [4].

This research work aims to bring SA to the domain of management, as a tool for decision making, a technique planned, implemented, and used by marketers. As a topic to experiment, we have chosen a subject of extreme importance in the days when this article is being written: the impact of the 2020s lockdown over sentiments related to virtual education. The emergence of social distancing has accelerated the virtualization of studying. A better understanding of people's reactions within this new scenario, through the application of SA, is the goal of the experiment.

This paper is structured as follows; it begins with this introduction, and Sect. 2 presents background and related work. Section 3 contains more information about the context of the two periods analyzed, the software used, the data collected, and the structure of our SA model. Section 4 describes the use of the model to the selected subject. Section 5 brings discussions on the experience, insights about sentiment and social media, and suggested topics for future research.

5.2 Background and Related Work

Scientific studies frequently defend the value of SA to generate insights for decision making. SA is defined as a process of "quantifying the emotional value in a series of words or text, to gain an understanding of the attitudes, opinions, and emotions expressed" [4] mainly for marketing processes, and describes the steps to performing SA, by the use of programming languages like Python. The advancement of data

processing and in machine learning (ML) research is creating new possibilities for SA, including the use of classifier models from application programming interface (API)—without the necessity of software development. An API is "a set of generic function calls that enables system implementations to a common interface" [5]. In other words, an API enables the transmission of data from one application to one another.

The analysis of verbal content, these days mostly enhanced by computational linguistics and text analysis based on natural language processing [6], has its origins in medicine, as a tool for the investigation of verbal behavior. During psychophysiological studies on epilepsy, Doctor Gottschalk from Psychiatric Research and Training Center of Chicago, Illinois has created a method to analyze and measure communication processes, as a way to find relations between verbal recorded content and epileptic convulsions triggers [7]. Classified by Dr. Marsden as "pragmatic" [8] that method consists of the classification of statements in content categories, empirically adjusted according to patient´s reactions, using lexical features (e.g., the comparative adverbs "like" and "too much") to provide additional weight.

In the marketing field, thanks to the advance of machine learning, SA is applied to a range of goals, like rating services as "recommended" or "not recommended" [9], based on algorithms that take written reviews and produce classification outputs; or to measure brand reputation [10]. SA is used further to perform predictions, such as a political election on Germany [11], or the fluctuations of stock prices [12]; and to measure the impact of social media communication, like in the comparative study of sentiments related to pro-vaccination versus against-vaccination campaigns [13].

From Nike Inc, we have an illustration of how useful SA can be for marketing planning and brand management. Advertising launched by Nike in 2018 generated a big wave of adverse reactions [14]. SA shows that negative sentiments grew once the campaign was published [15]; positive sentiments were growing in parallel with negative ones, reflecting the variation in Nike's volume of sales, which increased by several tens of % [16].

Social media networks, especially Twitter, provide spaces for the free expression and discussion over several topics, for example, events, services, personalities, and brands, which makes Twitter a valuable source of data on the opinions [17] toward the subjects of interest for research, government, or business.

Another application case of text mining techniques is the classification of hotel services, based on the content of online reviews published by guests, which allows the classification of reactions to be associated with different attributes of the services (cleaning, friendliness). Extracting information from content in the form of user-produced text appears to be one of the high-potential uses of AI that specific case [18] was a source of inspiration for the project described in this article.

5.3 Case Study

For this research, we used data collected from the social network Twitter to study the reactions of people about online learning, during the COVID-19 pandemics, in two different periods: 600 microblog posts ("tweets") at April 25, 2020, and other 600 tweets at May 26, 2020. The periods were selected considering the evolution of the lockdown.

The first period was close to the peak of interest in virtual education, and the second period was at the beginning of reopening, as illustrated in Fig. 5.1.

The be classified as positive, negative, or neutral, and the content is sent via API to the Web-based platform MonkeyLearn, which provides SA as an ML service. Other ML services provided by that platform are the extraction of features, keyword, and entities from a text; topic labeling; and intent detection. The software used in the model is listed in Table 5.1, and its structure follows the five steps described below, represented in Fig. 5.4.

5.3.1 Trigger-Action API Integration

The data process is automated by a sequence of programmatic actions in three steps on Zapier—a trigger-action platform that provides an interface for end-users, to

Fig. 5.1 Interest over time on "school closed" and "school open" measured by Google trends search volume index, reflecting the differences between the two periods of data collection
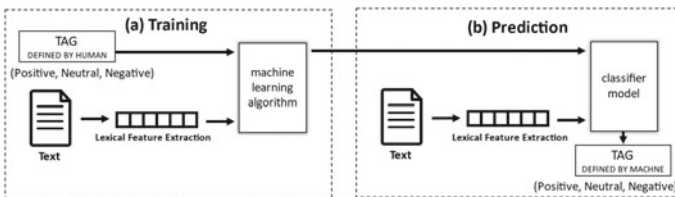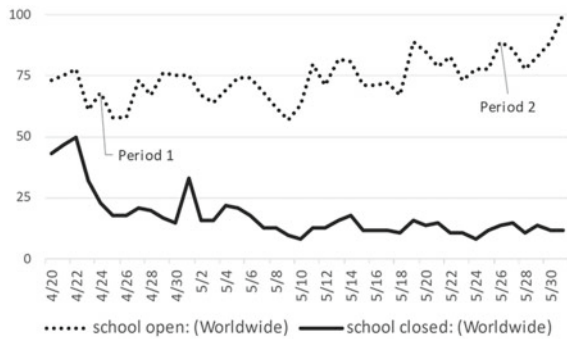
Fig. 5.2 Machine learning classifier construction. Adapted from monkeylearn.com
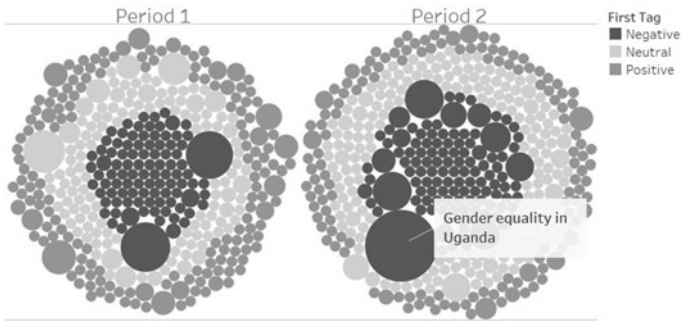
Fig. 5.3 Incidence of positive, negative, and neutral tweets

Table 5.1 Tools used in the model

Software	Description	Use in the model
Zapier	Trigger-action platform	Automated integration of APIs
Twitter	Social network	Data source
MonkeyLearn	Machine learning API	Text analysis
Google Sheets	Web-based spreadsheet	Data storage
Tableau	Business intelligence tool	Data visualization
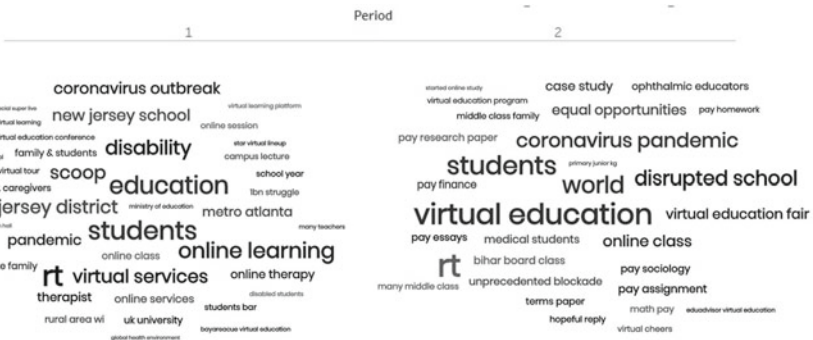
Fig. 5.4 Most frequent and relevant words in the tweets

bridge different APIs [19]. The first step was to import content from Twitter: once a user posts a new tweet with one of the pre-select terms within the text. Between Zapier and IFTTT—the most popular trigger-action platforms at the time this paper was being written—we made our option for Zapier, due to the possibility of creating multiple trigger sequences [20].

Table 5.2 Data collected from Twitter

Field	Data type	Description and use
Created at	Date/time	The time when the tweet is created
Text	Text	The content of the tweet. Is sent to MonkeyLearn for SA
URL	Text	Direct link to the tweet. Used to access the original posts
Location	Text	This field brings the continent each tweet is from. Field discarded, to consider tweets worldwide
Language	Text	In this model, we consider only tweets in English

5.3.2 Data Collection

The trigger that starts the process is a new tweet, which contains one of the selected terms, study online or virtual education. As a response to this trigger, our Zapier program collects the data from the tweet. These two periods were set to allow the comparative analysis of the impact of the lockdown experience over the sentiments related to virtual education. The data collected from Twitter are described in Table 5.2.

5.3.3 Text Mining

Next, the content of the tweet is submitted by our Zapier program to the MonkeyLearn API, which performs the text analysis to classify the sentiments expressed in the text. Differently to the SA systems based on a list of polarized words classified by humans, MonkeyLearn uses a hybrid approach that combines elements of rule-based systems and ML techniques [21]. The data produced by text mining is described in Table 5.3.

In the hybrid approach, entire texts pre-classified by humans as positive, negative, or neutral have their lexical features analyzed separately by the algorithm, which learns the correlation between lexical features and tags. Once the classifier model is trained, the text sent via API has its features extracted and classified according to the

Table 5.3 Data generated from text analysis API

Field	Data type	Description and use
First tag	Text	The main sentiment detected by the text analysis algorithm: negative, positive, or neutral
First tag confidence	Num	A confidence interval of the main sentiment classification. Not used in the model to keep the uniformity of the sample´s sizes
Second tag	Text	Secondary sentiment. These fields can be useful for the analysis of longer texts, where more than one class of sentiment can be identified
Second tag confidence	Num	

related sentiments and the relevance to the text structure, as represented in Fig. 5.2. The result is a prediction of the predominant sentiment of the text.

5.3.4   Data Storage

The third step of the sequence in Zapier is storing the data of the tweet, plus the sentiment tags, into the cloud-based spreadsheet platform Google sheets, that allows real-time update and access, and data-sharing among different users.

5.3.5   Data Visualization

Due to the complexity of the object of this study, plain numbers could be insufficient to understand the changes in people's perceptions. To summarize data and present it in an easy and comprehensible form, we have created a data visualization dashboard in Tableau. Data visualization is an effective method to analyze data based on visual means, with different perspectives encompassed simultaneously [22]. Some examples are the bubble charts (Fig. 5.3) and word clouds (Figs. 5.5 and 5.6).
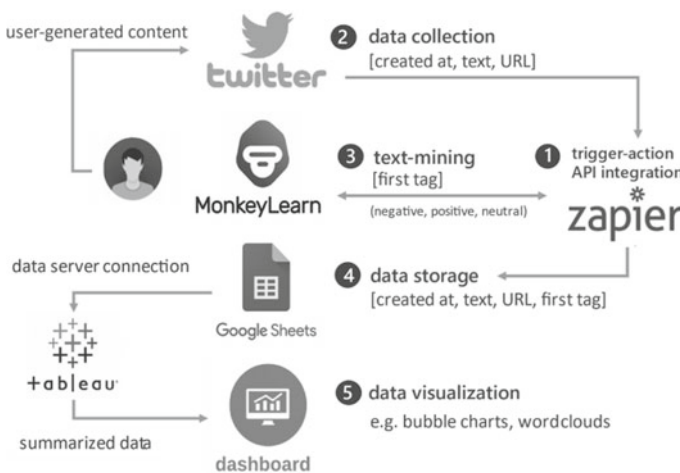
Fig. 5.5 Model's structure

Fig. 5.6 Examples of positive and negative tweets
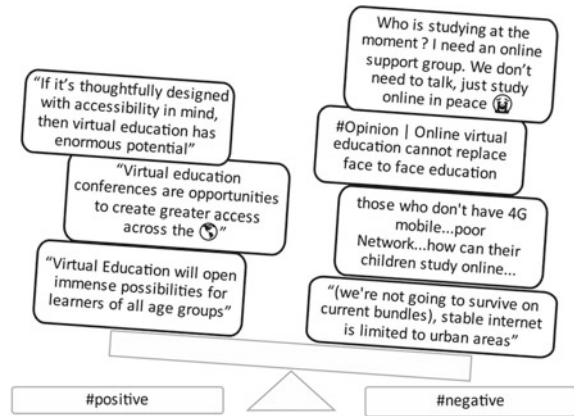
5.4 The Experiment

The experiment consisted of the analysis of sentiments related to the terms study online and virtual education. These terms were selected based on the hypothesis developed for this study: The perception related to online learning was affected by the contingent virtualization of education, which occurred in response to the COVID-19 lockdown, in 2020. The bubble charts (Fig. 5.3) illustrate the incidence of tweets associated with each sentiment classification. Each bubble represents a tweet, the color, and the sentiment.

The size represents the dissemination of the content: the larger the bubble, the more "retweeted" (forwarded) was each tweet. The charts show a distinct decrease in the incidence of positive sentiments, from the first period to the second one.

To better understand the origin of the sentiments, we used word clouds, a form of visual presentation of words or tags, where size, weight, or color and represents frequency (and thanks to ML, relevance) of the associated terms [23]. The most frequent and relevant words differ from the first period to the second one, indicating diverse problems faced by society along with the crisis, and the reactions of people expressed on the content of tweets (Figs. 5.5 and 5.6). Objections and fitness on practical learning are revealed in both sessions, with a dominance of social questions over personal ones.

The structure of the model is illustrated in Fig. 5.5, and some of the tweets are exemplified in Fig. 5.6.

5.5 Discussion and Future Research

Social media rearranges the boundaries between public and private spheres [24]. Our expectation with the present study was better understanding the influences of

personal experiences over the sentiments related to a specific topic; personal questions becoming public, allowing the analysis of sentiments expressed in the network. By analyzing the results, still, what we found was a two-way influence of sentiments between private and public issues. In the first direction, issues like the need for help on using meeting tools, lack of contact with teachers and other students, or poor Internet connections have affected sentiments about virtual education. Online studying was mostly an idea, full of uncertainty, in the first period, and a real challenge, with actual issues, in the second one; the contrast between expectation and reality is possibly a factor for the decreasing of the positiveness of sentiments. On the second direction, public questions also affected sentiments, reaching even more people (being more retweeted) than posts about individual problems: special education groups striking the State of New Jersey, due to accessibility questions, in Period 1 [25]; alerts about girls charged for household, instead of going online for studying, in Uganda, in Period 2 [26].

By approximating people of any classes and origins, electronic media allows former distinct groups, now connected, to share information about their situation. This sharing creates tension so that rights, opportunities, and experiences are shared by the entire population: "the loss of our old sense of place" [27]. As a manifestation of this tension, social issues seem to influence the sentiments on topics that undermine or reinforce inequality, in this case study, the prominent necessity of study online, against all the difficulties.

Further researches can be focused on confirming and describing this mutual influence between public and private spheres in the electronic media: personal experiences and associated sentiments spreading to the network; social issues influencing individual perceptions on sensitive topics.

A better understanding of this network of sentiments influence of sentiments, as well as the democratization of SA, provided by the use of models like the one described in this paper, can be useful to support decisions by mapping and predicting the impacts of facts, conditions, and decisions over sentiments related to topics, ideas, and brands.

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Chapter 6
The Post-COVID-19 Shopping Experience: Thoughts on the Role of Emerging Retail Technologies

Ana María Díaz-Martín, Myriam Quinones, and Ignacio Cruz-Roche

Abstract   Prior to the COVID-19 outbreak, the retail sector was already undergoing an unprecedented level of disruption largely driven by the impact of technology on both consumer behavior and retailers' operating procedures. The aim of this article is to reflect on the technological advancements that retail companies could leverage to deliver superior value to customers, while supporting their long-term economic goals as the economic and health implications of the coronavirus crisis unfold. The Kahn Retailing Success Matrix provides the theoretical framework for the study. Our work extends previous research by analyzing how different technological solutions that facilitate a touch-free and highly automated shopping experience support Kahn's four basic competitive strategies. This article offers practitioners a reference point for creating a technology-enabled competitive positioning to survive and thrive in the post-COVID-19 retail marketplace.

6.1   Introduction

In the early months of 2020, retailers from all over the world witnessed the first adverse consequences of the COVID-19 outbreak. Thousands of companies had to stop their operations while others experienced unprecedented supply chain disruptions caused by increased demand coupled with the emergence of new shopping behaviors. In the midst of an economic downturn and strong turbulence in consumption, the pandemic appears to be an opportunity to hasten the speed of change in the retail industry. In 2003, the SARS outbreak was considered a turning point for e-commerce giants such as Alibaba and JD.com. Similarly, during the global financial crisis of 2008, American Express and Starbucks pivoted to digital operating models. Thus, the 2020 health emergency is likely to accelerate the shifts that the retail industry was already experiencing before the pandemic emerged [1].

A. M. Díaz-Martín · M. Quinones (✉) · I. Cruz-Roche
Finance and Marketing Department – Facultad de Ciencias Económicas y Empresariales, Universidad Autónoma de Madrid, Madrid, Spain
e-mail: myriam.quinones@uam.es

A so-called shopping revolution [2] was already well underway prior to the coronavirus outbreak. Building on prior academic studies [3–6], we note several forces that are converging to change the retail industry since the beginning of the twenty-first century:

(1) *New shopping habits.* Customers are no longer compliant clients but rather savvy shoppers. They compare prices and purchase merchandise through multiple platforms. They use personalized recommendations streamed via social media to gather and curate pre-purchase information and are frequent online shoppers. Digitally native consumers are achieving greater relevance and power. For them, price comes with comfort, pleasure, and sustainability when choosing a retailer.

(2) *Harmonized retail.* The customer journey is no longer a linear experience [7]. Customers are always connected and use all channels interchangeably or even simultaneously, expecting a seamless experience regardless of whether they shop at the physical store, online, or through social media. This implies that the client is the channel. In addition, increasing popularity of virtual retailers forces traditional retail companies to develop and improve their online presence.

(3) *Vertical integration.* Many brands sell directly to consumers through their own physical and online stores. Showrooms, flagship, and pop-up stores managed by direct-to-consumer brands or digital native brands coexist with multibrand retailers, increasing the level of competition [8].

(4) *Over-storing.* Up until very recently, retail offer was on the rise in terms of number of stores and selling area in square meters. Some retailers opened new shops to attract proximity customers. Others inaugurated flagship stores in commercial streets to strengthen the brand and generate loyalty through better shopping experiences [9].

(5) *New technology.* Advancements in technology bring tremendous changes in terms of shopping behavior and retail management [10, 11]. Customers seek for information through conversational platforms, digital catalogues powered by augmented reality, and social media. Retailers digitize their stores and incorporate advancements like in-shop navigation, geo-fencing, facial recognition, smart dressing rooms, mobile payments, and automated check-out solutions [12–15]. Data mining techniques, together with advances in artificial intelligence (AI) and machine learning, enable retailers to gather and utilize and enormous amount of information, and blockchain-based processes increase retailers' productivity and transparency.

The novel coronavirus has transformed the way services are designed and delivered [16]. The operating procedures in retail have changed and will continue to change as economic and health implications of COVID-19 unfold. In the recovery period, technology will be one of the most significant game changers for retailers [17].

Given the vast array of technological advancements available, it can be asked what are the retail technologies that are substantial enough to support retailers' long-term economic goals. The purpose of this article is to analyze how emerging technologies can help retailers improve their competitive positioning, while ensuring employee

and customer safety. This study builds on the Kahn Retailing Success Matrix [2] to classify retailing technologies. By doing so, we contribute to current knowledge on the role of technology in the transformation of the retail landscape.

The rest of this paper is organized as follows. The first section reviews the expected effect of the coronavirus outbreak on the retail industry. In the next two sections, we analyze the role of technology as an enabler of Kahn's basic retail strategies and reflect on how technology can create value while protecting people amid the COVID-19 pandemic. Finally, we present the main conclusions of the paper and future lines of research.

6.2 A New Retail Setting

When the COVID-19 crisis emerged, shoppers and retailers were already witnessing a fast-paced digital revolution. The health crisis only boosted many of the forces that were reshaping the retail marketplace, generating a new set of challenges for retailers that need to be examined. Building on the trends identified by Kahn [2] and Grewal et al. [3], this section analyzes the effect of the coronavirus health crisis on the macrotrends that were already transforming the retail industry, and it describes how the pandemic could accelerate major shifts in consumer behavior and the distribution structure.

Although shopping habits are usually stable and slow to change, the COVID-19 crisis transformed everyone's life at once and in a few days [18]. During the first phase of the health crisis, consumers actively stockpiled emergency supplies such as canned food, paper products, and cleaning supplies. With restaurants and bars across the world shuttered for weeks, families ate more meals at home and consumers spent more on food and beverages at grocery stores. To cope with the growing demand of essential products, some retailers had to change their product mix and sought for new local suppliers or increased store brands' share of shelf [19]. With consumers forced to stay at home, cocooning increased. Consumers were more connected than ever through their phones, TV, watches, computers, voice assistants, and other smart devices, providing real-time information about their needs, preferences, and habits.

During lockdown, many customers perceived e-commerce as the most convenient and safest shopping channel [20]. The shift to online shopping, coupled with supply shortages, generated unprecedented supply–chain challenges for retailers. Amazon, for example, had to hire 175.000 new US workers to meet growing demand during the COVID-19 pandemic. While officially mandated shutdowns made e-retailers best players in the industry, delays in the delivery service during the outbreak opened the door for new competitors, such as local retailers offering in-store pickup and vertically integrated direct-to-consumer brands. As consumers increasingly become multichannel customers, firms need to continuously challenge their approach to e-commerce and invest to improve their digital capabilities [21]. Some firms look for technology partners like Amazon, Alibaba, or the new Facebook Shops to provide a seamless shopping experience across all channels. In this new competitive landscape,

AI-powered data collection and data analytics become paramount in dealing with the requirements of harmonized retail.

With consumers migrating online and foot traffic to the store lacking, additional retail outlets are likely close. Inditex, owner of Zara, recently announced a plan to close as many as 1,200 mainly smaller stores around the world. Certain larger stores will act as distribution hubs for online sales, which rose by 50% year-on-year during the first quarter of 2020, while other locations will be converted into "dark stores" for fulfillment only.

Finally, when stores reopen, many customers will continue to buy online. Certain shoppers are still reluctant to visit stores, and if they do, they look for transactions that are as contactless as possible [22]. Therefore, retailers are implementing basic health, hygiene, and safety solutions to meet governments' requirements as well as customers' and employees' needs for touch-free interactions. Rapid innovations in technological solutions that are mobile and support physical-distancing expectations, coupled with low-touch service delivery protocols, will most likely transform traditional operating models.

Technology has always been a key enabler of change in the evolution of retailing [23], and it goes with and through all the above-mentioned trends (see Table 6.1). With the online and physical environments becoming increasingly entangled, current advancements in technology encourage and sustain strategies that drive efficiencies and deliver reduced costs, while creating immediate and personal customer engagement. To succeed after COVID-19, investing in the right technological solutions will be pivotal for retailers. However, retailers should not invest in technology just for the sake of it, nor should they wait too long to see which retailing solutions prove to be better because by the time they have such information, it may be too late to be competitive [24]. Investments in new technology, as in any other asset, should be based on the value they contribute to generate. In this context, the Kahn Retailing Success

Table 6.1 Evolving retailing landscape

Pre-pandemic retail trends	Changes in retail triggered by the COVID-19 outbreak	Post-pandemic challenges
New shopping habits	Surge in demand of essential product categories and changes in customer behavior	New safety and economic concerns. Continued cocooning
Harmonized retail	Consumers shift to e-commerce and new delivery options	Full integration of online and offline shopping. Data capture and data analytics are crucial
Vertical integration	Many firms cannot adapt due to lack of skills and budget needed	New competitors and technology partnerships
Over-storing	Non-essential, physical stores closed during lockdown	Many stores will never reopen Bankruptcies
Emerging technologies	Technology plays a major role in enabling efficiency and keeping retail businesses running	Digitization accelerates. In physical stores, contactless operations are key

Matrix [2] provides a good theoretical framework to classify emerging technological solutions.

6.3   The Impact of Disruptive Technologies on Retailer's Competitive Advantage

Customers trust successful retailers because they provide the goods and services that shoppers desire, while offering a better shopping experience than their competitors do. Based on these two ideas, Kahn suggests that retailers excel when they either provide more benefits to their customers or eliminate pain points from their shopping experience, thereby creating a superior competitive advantage.

Her theoretical framework is articulated around a 2×2 matrix where the horizontal axis represents the retail proposition (product benefit or customer experience) and the vertical axis represents the superior competitive advantage (increase pleasure or eliminate pain points). The Kahn Retailing Success Matrix reveals four basic retailing strategies: branded performance superiority, enhanced customer experience, frictionless shopping experience, and operational excellence-cost efficiencies (low price). Leadership depends on offering superior value in two quadrants and meeting fair value in the other two [2, p. 13].

Given that retailer's superiority is highly dependent on the technological advancements that firms adopt, we recently carried out a study [25] to analyze the technological solutions that retail experts believe could have the greatest impact on each of the quadrants of the Retailing Success Matrix. In order to determine the impact of 20 game-changing technological solutions on retailer's activity, we accomplished a comprehensive literature review and a qualitative study comprising three in-depth interviews and three focus groups. In addition, survey data was collected between December 2018 and May 2019 from a sample of 168 managers of both national and international consumer-good manufacturers, retailers, and technological service providers. Participants had to assign each technology to the success strategy they believed it had the greatest impact on. Figure 6.1 summarizes our results.

However, the challenges arising from the coronavirus crisis have added a new layer of complexity to retailers' ability to create a competitive strategy. As we described in the next section, retail companies' success in the next normal will depend, in part, on their ability to prioritize technology investments. They need to rethink how to direct their limited resources toward the business solutions that have the greatest pay-off potential, while adhering to the new safety regulations and addressing emerging health concerns.
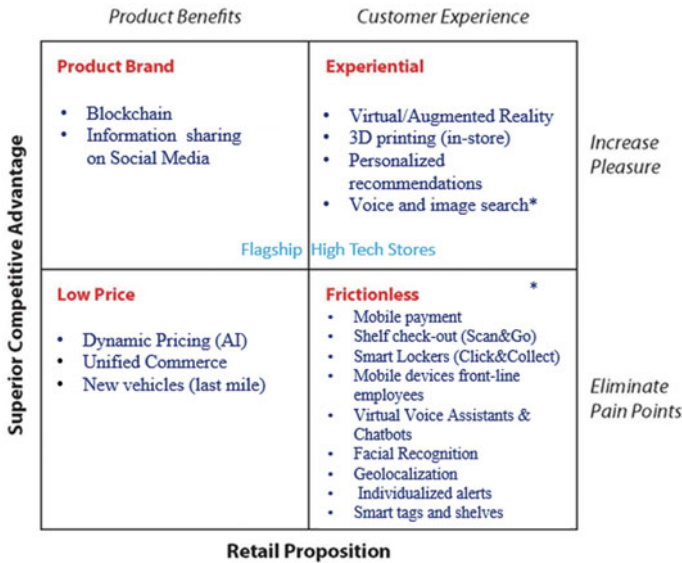
Fig. 6.1 Impact of technology on Kahn's Retail Success Matrix

6.4 Technologies that Create Value While Protecting People

The International Monetary Fund has warned that the coronavirus pandemic will turn global economic growth "sharply negative" in 2020. As demand drops with consumers tightening their belts, retailers will need to focus on managing short-term costs, optimizing assortment and pricing, while continuing to deliver a reason to shop with them. In addition, consumers looking to safeguard their health may have greater motivations and fewer perceived barriers to seek technology-enabled solutions to assist their shopping journeys [26]. These shifts in consumer behavior will affect how retailers use technology as a driver of differentiation in the short and longer term.

This section presents how the technological solutions that we identified as enablers of Kahn's four basic retail strategies could contribute to deliver a trustworthy customer experience as stores reopen and retailers rebalance existing focus areas with emerging health considerations.

6.4.1 Branded Performance Superiority

Retailers who lead on brand offer products that provide more differentiation, and ultimately more confidence to customers, as compared to other goods and services in the market [2].

Presenting the firm with empathy and sharing information on social media in an open way is a key determinant of trust in brands. To resonate with their internal and external customers, retailers have used social media during the pandemic to connect in an authentic manner. Those who were able to exhibit emotional intelligence and communicate with care, honesty, and empathy generated brand trust and brand loyalty as a result. Nike, for example, used its digital ecosystem to connect with its millions of customers at home trying to maintain physical well-being with remote workouts [27].

According to the results obtained in our study, one the most suitable innovations to reinforce branded performance superiority is blockchain. Blockchain's immutable distributed ledger technology has the potential to improve collaboration between parties in flexible supply networks, allowing retailers to ensure that essential products are available in the right place at the right time. One example is IBM's blockchain Food Trust, which had 11 foundational members back in October 2018. By the end of May 2020, it had about 300 suppliers and buyers on the network, with 6 million packed-food products on store shelves [28].

Finally, flagship stores equipped with high-tech have a positive impact on brand trust and, simultaneously, they contribute to offering a more exciting and amusing customer experience. Although the lockdown has kept flagship stores closed for a long time, the technology they deploy will provide valuable data for a safe reopening and for a faster recovery.

6.4.2 Enhanced Customer Experience

Retailers that excel on customer experience work hard to add experiential components to the shopping tasks. Thus, they provide more pleasure, more excitement, and more fun than other retailers can provide [2].

The coronavirus outbreak and the subsequent lockdown altered consumers' expectations, activities, and motivations regarding the shopping experience. Health and safety rapidly became one of the factors that mattered most to customers as they planned their purchases. When visiting physical stores, shoppers had to wait in line to comply with hygiene and social distance measures, and had to sacrifice many of the hedonic benefits of shopping. As a result, retailers begun to adopt technological solutions to satisfy those customers who wanted to spend less time in the store. One example is the virtual queuing systems. The Italian Ufirst app allows customers to skip queues and instead join a virtual system that sends them a message when they can enter the shop or it is their turn for a personal one to one appointment [29]. Portuguese retailer Continente launched a self-scanning mobile app to scan and pay for items without waiting in line. The app also creates and manages shopping lists using voice, text, and barcode reading.

Virtual (VR) and augmented reality (AR) technologies can also play a key role in either enhancing the in-store customer experience or in bringing the in-store experience to consumers' homes, while limiting the need for physical interaction. Before

the virus outbreak, many vertical brands (e.g., Nike, Adidas, Ikea, Gap, Sephora, among others) were already using augmented reality to enable customers to virtually try on products or view how a product looks in their home [30, 31]. During the COVID-19 crisis, Ikea's online sales reached double what they were a year ago. Experts credit innovations such as a recently launched advanced virtual showroom with mobile and deep learning.[1]

When shops reopen, retailers will likely invest in AR and VR to replicate the in-store experience at home, allowing customers to examine their intended purchases in advance while protecting employees and enabling them to work remotely. In the longer term, VR/AR could also help them navigate through the store from home, displaying virtual endless shelves with a curated selection of product and advertising content based on their past purchase history [32].

6.4.3   Frictionless Shopping Experience

Retailers that choose to lead on frictionless shopping experiences prioritize offering customers the easiest and most convenient way to shop [2]. Most of the technological innovations that have emerged in the last decade contribute to eliminate pain points in the shopping experience. Retail experts who participated in our study identified new payment methods, facial recognition, virtual voice assistants, geolocalization, and smart devices (lockers, tags, shelves, employee tablets) as technological solutions aimed at making the shopping journey easier.

In a post-pandemic, fearful-of-touch world, automated activities, and processes, which operate without active human input or control [33] can clearly contribute to offer self-serve, contactless options for shoppers, and store operators. Before the coronavirus outbreak, several leading retailers had already implemented automated solutions in order to improve convenience and eliminate pain points from the customer journey (e.g., Scan & Go, self-check-outs, automated pickups, and returns systems). During the pandemic, as cash-free stores became the new normal, consumer grew more comfortable with contactless and mobile payment methods. Technology-driven solutions that reduce in-store physical contact also include AiFi technology, which enables payments to be automatically charged when the product is scanned with a smartphone, becoming completely check-out free. In the short term, these in-store solutions will be a key to meet emerging social-distancing norms. In the future, biometric technology could enable more sophisticated touch-free payment and check-out methods.

As retailers invest in low-touch solutions, they should consider expanding the use of smart tags powered with QR codes as a solution to offer shoppers product information without coming into contact with anything in the store. Retailers should also consider radio-frequency identification (RFID) tags to manage their inventory and optimize the store layout. RFID technology connected to smart mirrors and

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[1]https://chainstoreage.com/top-performing-e-commerce-site-during-covid-19.

associates' tablets can be used to keep track of products that shoppers bring into the fitting rooms. On the mirror, the shopper can request a different size or color of the product without needing to talk to an associate. The mirror will ping an associate's tablet, allowing associates to checkout shoppers from anywhere in the store without the inconvenience of having to wait in line. Sales associates should feel safer if they work in a contactless autonomous store.

Bluetooth or Wi-Fi-based beacon technologies, which support identifying a person's location and navigation via smartphone [34], could help limit the number of people entering a shopping location or be used to give assistance to speed up the purchase process. Spatial sensors can be redeployed to promote social distancing. Retailers can monitor in-store traffic and identify when locations are busy using video feeds and computer vision modeling to reflect the amount of human activity in a particular location over time. Physical distance measurement was not a real need before COVID-19, but now parking areas, individual aisles and departments need to be monitored for traffic and densities. This technology also boasts potential uses beyond social distancing, for example, to determine if someone is interested in an item based on their posture, their gait and how long they are spending at it. It also provides valuable data and advanced analytics such as real-time and historical foot traffic counts, cumulative impressions, dwell times, recurrent visits, and peak hours.

This crisis could be a catalyst for autonomous retail and it may also accelerate consumer adoption of delivery curbside pickup. In the longer term, replenishment robots, which Tesco and Amazon among others are already testing, and humanoid robots like Pepper from SoftBank Robotics could be part of the list of technology-driven solutions that reduce in-store physical contact.

6.4.4   Operational Excellence

Retailers that deliver operational excellence strategies have developed operational models that can efficiently manage inventory, keep overhead costs down, and reduce transactions costs at every step [2]. They provide reliable products at the lowest prices and, therefore, offer customers the best savings.

The COVID-19 crisis caused retailers to face collapses in both supply and demand. As a result, supply chains were significantly disrupted. As shortages started to appear, either through stockpiling or supply constraints, assortments were reduced and many categories were switched-off to simplify store operations.

The use of technology goes hand-in-hand with superior supply chain management, especially when retailers sell across multiple platforms, which requires a single system that delivers real-time inventory and order integration between the different sales channels and the fulfillment channels (unified commerce). For example, Lululemon, the specialty athletic apparel retailer, is leveraging existing investments in supply chain technology to effectively fulfill online orders and link their e-commerce site and stores.

Advanced technologies such as the Internet of things and artificial intelligence increase visibility across the end-to-end supply chain, delivering operational excellence. A greater use of robotics and process automation will also improve stores management and supply chain functions and potentially save significant costs, eliminate human error, and deliver superior efficiencies. Autonomous vehicles will play an important role in the retail industry, primarily because of their ability to carry out traditional people-intensive functions much quicker, more consistently and without the need for in-person interactions. In addition, the success of Amazon and a other leading online players has made clear that AI-powered dynamic pricing is a critical capability for competing in e-commerce, omnichannel, and even brick-and-mortar retail to drive revenue and margin growth.

It is important to mention that, while technology can enhance customer experience, drive efficiencies, and deliver reduced costs, trained employees will continue to have a key role in managing customer services and interactions. Thus, the ability to adapt to an even more digital future depends, in part, on closing the gap between talent supply and demand [35].

6.5   Conclusion

In this paper, we reflect on the fast-paced changes that the retail sector was already experiencing prior to the COVID-19 outbreak and on how the challenges and opportunities that arise from this health crisis will most likely speed up the adoption of emerging retail technologies. Our work offers several theoretical and managerial contributions.

Before the pandemic, a growing number of industry events and whitepapers were already focusing on the role of technologies in retail showing that this was an interesting topic for practitioners. In addition, in the last months, there has been an increasing number of calls for papers on this area of research by academic journals. Despite these initiatives, extant literature suggests the topic is still under-researched.

As a first contribution to the literature, this study sheds light on how the retail landscape has changed and will continue to change as health and economic implications of the novel coronavirus evolve. An additional theoretical contribution is the use of the Kahn Retailing Success Matrix [2] as the framework to identify which technological solutions might help retailers create a competitive advantage in the post-COVID-19 retail marketplace. Our work builds on a pioneer typology of technologies developed according to the retailing success strategy they enable [25]. The majority of existing studies analyze individual technologies, while our work integrates different technologies into a common framework based on the Kahn Retailing Success Matrix. It is important to acknowledge that the four dimensions of Kahn's matrix are interrelated. This means that one technological solution could serve several retailing strategies. For example, voice assistants can add an experiential component to the shopping experience and increase convenience at the same time. Similarly, blockchain's technology can help generate trust and also increase operational efficiency.

From a managerial point of view, this study provides valuable insight on how retail firms can take advantage of emerging technologies to create and reinforce their competitive positioning while addressing the health concerns derived from COVID-19. The cases we examined in this paper make clear how important the full integration of safe-stores and shopping technology is going to be for retailers in the wake of the pandemic. Their relevance in the future will depend on the pace of recovery, the possibility of new outbreaks and the role of social distancing in people's lives.

As stores reopen, the evolution of the omnichannel shopping experience will accelerate. Moreover, if part of the customer journey must exist in the brick-and-mortar channel, consumers will most likely look for experiences that reduce physical, in-store interaction. However, the adoption of low-touch service protocols and investments in emerging technologies will have a negative impact on retailers P&L which, in turn, will require additional actions to grow gross margins. Therefore, most retailers will need to rethink their strategies and business models in the next normal. They will need to systematically assess their technology requirements and capabilities relative to new forms of service delivery. Some of these capabilities will need to be acquired or reinforced through mergers, acquisitions, and partnerships. In addition, they will require putting just as much emphasis on people as on systems and processes.

As retail companies continue to evolve and adjust to the new normal, more research is needed from the demand point of view to evaluate customers' perceptions about the use of technological solutions in retail and the potential gap between their expectations and those of the retailers. Therefore, this study is but a starting point from which to research the impact of emerging retail technologies on the post-COVID-19 shopping experience and their contribution to retailers' competitive advantage.

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Part II
Business Intelligence Databases and Marketing

Chapter 7
Contribution of Research and Development to the Efficiency of Social Progress in Latin America

Maritza Torres-Samuel, María-Elena Torres, Juan Hurtado, Aida Luz Vargas Lugo, and Darwin Solano

Abstract Research and development, measured mainly by the production of patents, and by the investment of public expenditure in this sector, are recognized indicators that reflect the economic development of countries. This paper proposes to make a comparative analysis of the technical efficiency of some research and development factors in Latin American countries and their contribution to social progress. The data envelopment analysis method is applied to determine the comparative efficiency between countries and the contributions of inputs. As a result, the number of active researchers in the country and investment in research and development is the main inputs that contribute to maximizing social progress in Latin America.

7.1 Introduction

Investing in Research and Development (R&D) is one of the factors recognized in countries to move toward a welfare economy Villanueva [1]. Thus, according to World Bank data [2], countries such as Israel, Austria, Sweden, and Denmark spend more than 3% of the Gross Domestic Product (GDP) in this sector and characterized by its economic development and quality of life provided to its population.

M. Torres-Samuel (✉) · M.-E. Torres
Universidad Centroccidental Lisandro Alvarado, 3001 Barquisimeto, Venezuela
e-mail: mtorres@ucla.edu.ve

M.-E. Torres
e-mail: melenats@gmail.com

J. Hurtado · A. L. Vargas Lugo · D. Solano
Universidad de La Costa, Barranquilla, Colombia
e-mail: jhurtado4@cuc.edu.co

A. L. Vargas Lugo
e-mail: avargas40@cuc.edu.co

D. Solano
e-mail: dsolano1@cuc.edu.co

In the case of Latin America, Spain, Portugal, and Brazil stand out as the only countries that spend about 1.2%, while the rest of the countries in this region contribute less than half of this value to this sector.

Exploring countries' economic policies and guidelines and maintaining a favorable macroeconomic environment contribute to achieve high levels of competitiveness Medeiros Conclaves and Camragos [3], Vásquez Torres-Samuel and Viloria [4], Furthermore, it has been proven that development and innovation have an effect on the economy of countries and their international positioning, and that innovation is not limited to the most advanced economies, but is also a global phenomenon WIPO [5], which is why we should ask ourselves what effect it has on the social progress of nations.

World investment in Research and Development (% of GDP) was 2.274% according to the World Bank [2]; moreover, Latin American countries represented .45% of the production of patents granted worldwide during the period of 2014–2018, according to data from the World Intellectual Property Organization (WIPO) [5], so that developing economies that invest in innovation are on the road to prosperity [6]. With regard to scientific production, Iqbal et al. [7] point out that growth and expansion have been observed, since it is clear that most university rankings show a strong relative weight for research activity Albornoz and Osorio [8]. Thus, there are studies that relate research productivity and economic growth, which examine the impact of the number of publications, research, and development expenditures on economic growth in the regions. On the other hand, scientific research and innovation are recognized by developing countries as mechanisms to leverage improvement in the quality of life and social progress [9–11]. The latter is defined as the ability of a society to meet the fundamental human needs of its citizens, to establish a foundation for improving and sustaining the quality of life of its citizens and communities, and to create the conditions for all individuals to reach their full potential [12]. It is measured by the Social Progress Index, which rates the performance of countries on a wide range of aspects of social and environmental performance relevant to countries at all levels of economic development. For the Latin American region, this index showed an average score of 69.64 for 2018, 6.18 percentage points above the world average [12], so it is interesting to know the positioning of these countries in this index and their performance in relation to innovation and research.

Among the indicators selected as variables of the study are the spending on Research and Development (% of GDP), the Index of Social Progress, the number of patents granted during 2014–2018, total scientific publications during 2014–2018, and the ratio of researchers per 1000 people, collected in this research to perform an analysis of technical efficiency in 12 Latin American countries and determine the contributions to social progress, applying the method of Data Envelopment Analysis (DEA).

The first part of the paper presents the methodology used for the selection and collection of variables and data. Afterward, the description of the DEA method is briefly presented, followed by the results achieved and the academic discussion. The results show the technical efficiency of the countries in relation to their development in innovation and their contribution to social progress.

7.2   Methodology

The analysis of technical efficiency using DEA was applied to data collected from 12 IberoAmerican countries published in recognized databases such as the World Bank, World Intellectual Property Organization (WIPO), Scimago, the Network of Science and Technology Indicators in Latin America and the Caribbean (RICYT in Spanish), and the Observatory of Competitiveness, from which complete data could be collected between 2014 and 2019 for four (5) selected variables, which are shown in Tables 7.1 and 7.2. Table 7.3 shows the selected Latin American countries with their respective inputs and outputs.

7.2.1   Efficiency Measurement and Data Envelopment Analysis (DEA)

Developed by Charnes et al. [16, 17] based on Farrell [18], DEA is an application of linear programming used to measure the relative efficiency of organizational units

Table 7.1   Variables inputs for the analysis of efficiency

Tag	Indicator	Description and source	Year
Patents	Patents granted	Total number of patents granted per country (direct filing and PCT national phase entry) *Source*: World Intellectual Property Organization (WIPO 2020) [5]	2014–2018
Papers	Scientific production	Number of papers published by country in journals indexed in Scopus at SRJ. *Source* (Scimago 2020) [13]	2014–2018
GdpRD	Research and development expenditure (% of GDP)	Gross Domestic Expenditure on R&D, expressed as a percentage of GDP. R&D includes basic and applied research and experimental development (World Bank 2020) [2]	Latest value published by country during the period 2014–2018
Researchers	Researchers per 1000 inhabitants	Researchers for every 1000 economically active people (Individuals). *Source* RICYT (2020) [14]	Last value found for all countries in the study, year 2014

Table 7.2 Variable output for the analysis of efficiency

Tag	Identification	Description and source	Indicators
SPI	Social progress index	Set of social and environmental indicators that measure the social progress of the 146 countries. *Source*: Social Progress Imperative (2018), Observatory of Competitiveness (2018) [15]	51 indicators, distributed in 3 dimensions: • Basic human needs • Fundamentals of well-being • Opportunities

Table 7.3 Latin American countries selected for the study

	Inputs						Output
	2014 to 2018			2014		Year	2019
Country	[a]Papers	[b]Patents		[c]Researcher	[d]GdpRD	[e]PIBI&D	[f]SPI
Argentina	ARG	70633	8625	4.8	0.542	2017	76.86
Brazil	BRA	377216	6203	2.97	1.263	2017	72.87
Chile	CHL	64836	3538	1.44	0.355	2017	80.2
Colombia	COL	53231	875	0.34	0.237	2018	70.31
Costa Rica	CRI	5111	44	1.79	0.423	2017	80.65
Ecuador	ECU	13388	53	1.59	.443	2014	71.88
Spain	ESP	468031	11360	9.15	1.237	2018	87.47
Mexico	MEX	117040	6961	0.86	0.312	2018	71.51
Panama	PAN	2855	404	0.26	0.147	2017	73.96
Peru	PER	12831	511	0.18	0.127	2018	71.31
Portugal	PRT	126463	315	15.05	1.366	2018	87.12
Uruguay	URY	7878	77	1.59	0.484	2017	77.77

[a]Total of scientific papers found in Scopus Database from 2014 to 2018. *Source* Scimago SJR (2020) [13].
[b]Total of patents granted from 2014 to 2018. *Source* OMPI (2020) [5].
[c]Researchers out of every 1000 economically active people in 2014. *Source* RICYT (2020) [14].
[d]Expenditure on research and development (% of GDP). *Source* World Bank (2020) [2].
[e]Year of update of the PIBI&D. *Source* World Bank (2020) [2].
[f] Social Progress Index. *Source* Social Progress Imperative (2020) [12, 15].

that present the same goals and objectives. The elements of analysis in DEA are called Decision-Making Units (DMUs). The application of DEA requires the selection of input and output variables. Indicators were selected to represent the inputs associated with Research and Innovation (see Table 7.1).

The Social Progress Indicator is the only output variable (see Table 7.2). The application of DEA requires that the DMU be homogeneous for comparative analysis (Cluster), and sufficiently heterogeneous so that information can be extracted from the comparison. In addition, each DMU must have the capacity to manage the

resources it has available; the number of units in the study must be sufficient so as not to limit the discriminatory capacity of the analysis (Coll and Blasco).

For the latter, the relationship between the total number of variables (n) and the number of DMUs is verified. The following rule is applied, where p is the number of input variables and q is the number of output variables. $n \leq p \times q$ Murias-Fernández [19]. For the present case, the following rule must be applied:

Cluster: $n = 12$, $p = 4$, $q = 1$; $n \leq p \times q$; $12 < 4 \times 1$; the condition is met.

The model of efficiency analysis applied is the BCC optimization mode Banker et al. [20] with variable returns, oriented to maximize the output. That is, maximizing the Social Progress Index given the available inputs. It is a flexible optimization mode, with minimum conditions to the production function, assuming the hypothesis of variable returns at scale, with which a measure of Pure Technical Efficiency will be obtained. Analyst Frontier® software from Banxia is used for efficiency analysis.

7.3   Results

The description of the data collected before the efficiency analysis is presented first. The correlation of the inputs on the dependent variable (Social Progress Index, SPI) presents an important correlation of Pearson with the expenditure in Research and Development (GdpRD) (0.644) and with the researchers (0.806) (See Table 7.4). Additionally, among the variables collected (See Table 7.3), Brazil, Portugal and Spain stand out as the countries with the highest expenditure on Research and Development in the region, exceeding 1%. The application of the DEA as a method for determining comparative technical efficiency among the selected countries shows high efficiencies with regard to social progress, which can be seen for Latin America in Table 7.5, and for the Caribbean in Table 7.6.

Both have similar results in terms of efficiency, but with peculiar differences in relation to the weight of the inputs that contribute to the efficiency of social progress (See Table 7.7 and Fig. 7.1). The relevance of researchers, patents, and investment in research and development in improving social progress in Latin American countries is evident.

Table 7.4 Pearson's correlation between study variables

	Papers	Patents	GdpRD	SPI	Researcher
Papers	1	0.756	0.782	0.388	00.464
Patents	0.756	1	0.420	0.246	0.255
GdpRD	0.782	0.420	1	0.644	0.829
SPI	0.388	0.246	0.644	1	.806
Researcher	0.464	0.255	0.829	0.806	1

Table 7.5 Efficiency by country and the distribution of percentage contributions of inputs to the efficiency of social progress

Country	Efficiency	Papers	Patents	GdpRD	Researchers
CHL	100	0	0	100	0
CRI	100	0	8.7	4.4	86.9
ECU	100	0	11.4	5	83.6
ESP	100	0	0	100	0
PAN	100	0	85	1.6	13.4
PER	100	0	0	0	100
PRT	100	0	0.4	99.6	0
URY	100	0	15.6	5.2	79.2
COL	94.52	0	0	0	100
ARG	94.15	6.5	0	93.5	0
MEX	92.71	0	0	0	100
BRA	89.14	0	0	0	100
		6.5	121.1	409.3	663.1
		0.54%	10.09%	34.11%	55.26%

The case of Latin America.

Table 7.6 Efficiency by country and the distribution of percentage contributions of inputs to the efficiency of social progress

Country	Efficiency	Papers	Patents	GdpRD	Researchers
CHL	100	0	0	100	0
CRI	100	0	100	0	0
ECU	100	0	11.4	5	83.6
PAN	100	0	64.5	35.5	0
PER	100	0	0	100	0
URY	100	0	15.6	5.2	79.2
ARG	95.3	7.2	38.2	16.4	38.2
COL	94.52	0	0	0	100
MEX	92.71	0	0	0	100
BRA	90.35	30	21.5	30	18.5
		37.2	251.2	292.1	419.5
		3.72%	25.12%	29.21%	41.95%

The case of Latin America.

Table 7.7 Distribution by region of the percentage contributions of the inputs to the efficiency of social progress

Region	Papers (%)	Patents (%)	GdpRD (%)	Researchers (%)
LatAM	3.72	25.12	29.21	41.95
IberAM	0.54	10.09	34.11	55.26
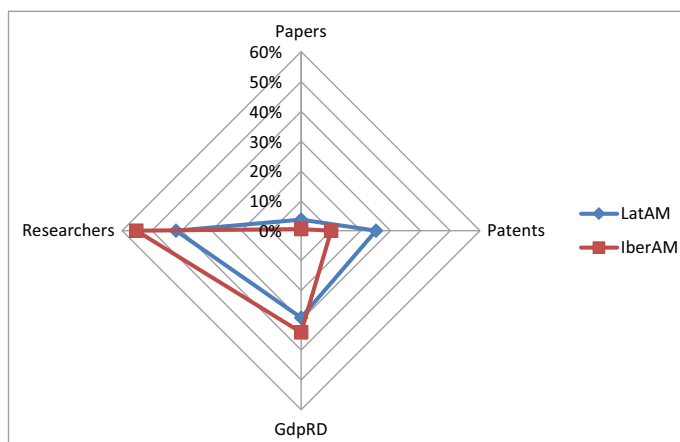
Fig. 7.1 Contribution of inputs to the efficiency of countries to maximize social progress

7.4 Conclusions

The technical efficiency has been analyzed using the DEA method in 12 Latin American countries with respect to five (5) indicators on Research and Development and Social Progress. As inputs, the percentage contributions of the GDP for research expenditures, granted patents, scientific publications, and national plant of researchers were considered; as output for the efficiency analysis, the Social Progress Index is used.

The Latin American and IberoAmerican regions have similarities in terms of the countries that are considered efficient; however, the percentage contributions to efficiency vary significantly among them. The relevance of researchers and investment in research and development as determining factors in social progress is evident when it comes to Latin America. In the case of Latin America, patents are added in addition to the above factors. The scientific production does not seem relevant in the results of the efficiency analysis carried out.

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Chapter 8
The Organizations' Paths to Market Success

João M. S. Carvalho

Abstract Management of innovation processes is still not enough researched and applied by managers, because they often do not know models that may help them make the best decisions in this context. This study aims at researching what types of paths to success are followed in innovative organizations, using a model that includes the ideas considered by the value chain evolution theory and the tetrad-value theory. A survey was carried out among large, medium and small organizations in Portugal. The results showed that the main reasons for failure in the market were: lack of adjustment to customers' requirements, economic unfeasibility, price too high, ignorance of the market, lack of resources and internal support, financial instability in destination markets, a lot of competition, and there has not yet been enough time for evaluation. At the light of the proposed model, it was also possible to know the distribution of the organizations' paths for success. Many innovative products followed a path that implied costly reformulations of different kinds. As such, it will be very important that organizations try to be more market oriented, enhancing their processes to collect, disseminate and analyse information, with better cross-functional coordination to achieve the best response to the market.

8.1 Introduction

In general, organizations in market leading positions have a capacity to develop products (goods, services, ideas, information, experiences) effectively and successfully [1, 2]. The studies show that there is a positive relation between innovation in processes or products and measures of market share, profitability, growth or market capitalization [3]. Innovation is the way by which entrepreneurs exploit change as an opportunity to create a new business [4], and it a process of turning opportunity into new ideas and practices [3]. It can also be understood as a change in technology,

J. M. S. Carvalho (✉)
CICS.NOVA.UMinho, Braga, Portugal
e-mail: joaomscarvalho@gmail.com

REMIT-Universidade Portucalense, Porto, Portugal

which means the processes to transform labour, capital, materials and information into higher value products [5]. Of course, beyond product or processes innovation, it is possible to innovate in relation to opening new markets, a new source of supply of raw materials or semi-manufactured goods, a new form of industrial organization [6], a new marketing method or a new organizational method in business practices [7]. Innovation process can be considered as an organized and controlled sequence of activities, starting with an idea that is transformed into an innovation, recognizing customer needs, and using information, knowledge and failures to learn and enhance that process [8].

Innovation can be achieved in many ways and always starts with a new idea that, after being developed and transformed into a product, may have success in the market. However, the acceptance of innovations by the market is actually unknown before product commercialization, even if we have studied the tastes and needs of consumers [5, 9]. Nevertheless, market success always depends on the level that the product meets customer needs. Lendel et al. [8], argued that management of innovation processes is still not enough researched and applied by managers, because they often do not know models that help them make the best decisions in this context.

We can find in the literature several innovation models that help the entrepreneurs to align their ideas and activities in order to achieve success on the market. The works of Rothwell, Marinova and Phillimore, Cagnazzo, Botarelli and Taticchi, Meissner and Kotsemir presented innovation models in historical perspective with their specific characteristics [10–14]. Tidd, Bessant and Pavitt described a simple model with four key phases for the innovation process to be successful: search, selection, implementation and capturing value [3]. These phases are similar to what Carvalho presented as the entrepreneurial process, which can also be accompanied by an innovation process [15]: (1) idea—to succeed in a business, it is needed a product that first meets the wants and needs of consumers, users, customers, or prescribers, and thereafter, all stakeholders as far as possible; (2) information—this phase entails hard work to estimate demand, to analyse actual or potential competitiveness of the organization, to evaluate the business sector and competition, to study the applicable law and the requirements of authorities that have power over the business domain, to test the product on the market as well as marketing strategies for each market segment; (3) implementation—one needs to collect all needed resources (financial, human, physical and intellectual), to design a business plan and to implement it; and (4) impact—measuring the success of the business (product) in terms of achieving organizational and market objectives.

Our purpose is to use a model with a few phases that include all the analytic characteristics of the more detailed models, such as the fact that the phases overlap each other and have backward loops; it could be circular and iterative with internal and external innovation activities [16, 17], like happens with open innovation [18]; it considers the value chain evolution theory [19] and the tetrad-value theory [20]. Based on many other innovation models [e.g. 21–23], Carvalho and Marnoto developed the 8P Innovation and Differentiation Model, which sums up the main dimensions where entrepreneurs can find opportunities to innovate [24]. These core domains of innovation define a business model and include the:

- Product (good, service, idea, information, experience), aiming at satisfying a human need;
- Price, it is related to product's value proposition, both financial and non-financial (e.g. social or cultural embarrassment, accessibility, complexity of use);
- Place (distribution) has to do with the set of transactions and logistics operations that allow product placement based on the conditions of time, place and manner that meet customers' needs;
- Promotion (communication) includes many tools, such as advertising in the media or at points of sale, promotions (e.g. samples, discount coupons, offers, promoters, prizes, contests, etc.), public relations (e.g. media, sponsorship, internal publications), the news in the media, personal sales, merchandising, direct marketing (e.g. letters, flyers, newspapers, phone calls, etc.), social events, exhibitions and trade fairs, lobbying, product name, brand symbols, packaging, labelling, etc.;
- Processes that are related to production and/or distribution, namely the alignment and organization of tangible and intangible assets;
- People is about the organization's team and their specific skills and competences;
- Partners may help the organization to differentiate or innovate the product performing key activities, sharing or exchanging skills or assets in terms of personnel, equipment, and technical or market knowledge, and creating value that allow to present competitive advantages in the market; and
- Purposes, which are related to the organizational mission, the product's economic, financial, social, ecological and psychological value, the chosen business model (for profit or non-profit; private or public; cost and revenue structures), and its relationship with societal sustainability (economic, social, ecological and psychological).

Most of the times, entrepreneurs must combine several of these elements to succeed [24]. We combine these models related to innovation and entrepreneurship in what we called the organization's path (TOP) model to succeed in the market (Fig. 8.1).

The first part of TOP model is related to the idea and information (A), which is the base to develop a business model (B—product, price, place, promotion, processes, people, partners and purposes) that will be implemented and measured in the market (C—implementation and impact). This model led us to the main question: What types of paths to success are followed in innovative organizations? This is a gap on literature that is worth to be more studied in order to alert managers to the costs of not doing the right things.

In the next section, we review the critical success factors for innovation, as well as critical failure factors that the entrepreneur should avoid.

Fig. 8.1 Organization's path model
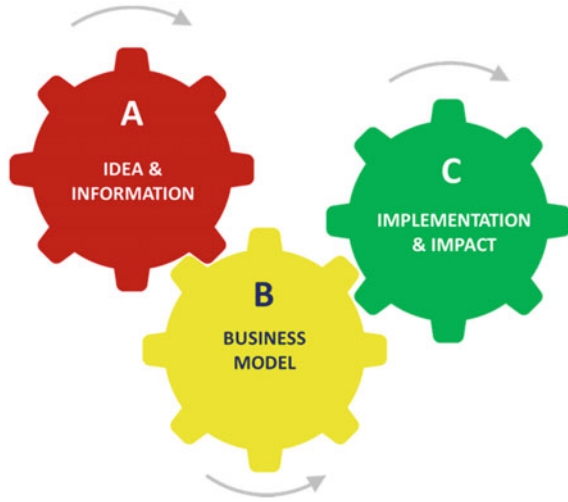
8.2 Critical Success Factors

A critical success factor concerns the organizational design decisions to be successful competitive in the market as stated by the value chain evolution theory [19]. The use of tetrad-value theory [20] can also help entrepreneurs to achieve market success with innovative products. This theory argues that, in addition to economic value, products can also present social, ecological and psychological values, which constitute an improved added value for the customer.

There are also many other variables that may impact on new product development success. It is possible to classify them into a threefold environment: internal, external and both ones.

Internal factors: cultural differences between people but also between functions [25]; past success with other products [26]; marketing and management [27]; customer orientation, continual improvement, employee involvement [28]; market orientation [29]; focus on products that do not meet consumer tastes [9]; development process and organizational factors [30]; differentiation, superior products, early product definition, solid up-front homework, technology actions, marketing operations, true cross-functional teams [31]; technology and market strategy, product characteristics, production processes, human capabilities, internal organization, and knowledge management [32]; high-quality new product process, adequate resources of people and money, a defined new product strategy for the business unit, R&D spending for new product development, senior management committed to, and involved in, new products, an innovative climate and culture, high-quality new product project teams, the use of cross-functional project teams, senior management accountability for new product results [33]; fit with company, proactive versus Reactive stance, organization, financial requirements [34]; time, cost, inter-personal interaction, quality of product, and the development of a "warm relationship" based

on openness and trust [35]; product performance-related factors, marketing factors (understanding the market and customer needs), synergy factors (good fit between product and marketing requirements and the resources of the firm), and organization and project management factors [36]; understanding customer needs, clear market analysis, applications of technology, and the vision, mission and value of the company [37]; the existence of formal or informal development processes within the company, the formation of a devoted project team, the awareness and understanding of senior management, etc. [38]; in science-based entrepreneurial firms, the availability of staff with commercial experience coupled with technical background [38]; understanding customers' needs and experience [39]; clarity of vision also has a positive relationship with success in technical and radical innovations, while stability of vision is positively associated with success in incremental innovation [40]; an awareness of the mission is regarded as a strong predictor of R&D project achievement and firm success [37]; firm size [41]; technological capability [41]; culture factor [42]; Management Skills [43]; learning capability [44]; competitive advantage [45]; organizational size, slack resources, administrative capacity, and organizational learning [46]; slack resources, specifically financial and human slack, Chief Executive Officer (CEO) tenure and CEO compensation [47]; the uniqueness of the advantages of the innovation, the startup organization characteristics and the person of the entrepreneur [48]; a thorough business plan with a clear strategy/mark analysis/competitor analyses, using an innovation as a business idea, the need for achievement, having locus of control, the willingness to take risks, and number of years of experience as entrepreneur [49]; being a member of a formal network, and having an advisory board [50]; the process of interaction with the environment and the degree of customer pro-activeness [51, 52]; the process of setting up the radical innovation [52]; free communication [51]; methods of acquiring market information and market technology developments [52]; being an expert [51]; a high seed capital and a team of founders [53]; industry experience [54]; market focus and customer involvement [54, 55]; a multidisciplinary and project focused organization [55]; the willingness to take risks, optimism, logical mind, and higher education [56]; multiple earlier jobs [54–56]; product advantage, marketing synergy and support, nature of the new product process, quality of execution of activities, technological synergy and organizational factors [1, 30, 57]; innovation and continuous renewal part of strategy, documentation of renewal activities, market research, employee involvement, and employee training [58]; the adapted sales strategy, the implementation speed of the data-driven service on customer site, the external communication to customers, the existence of an incentive system for customers, employee qualification for data-driven services, an adapted revenue model for data-driven services, modularization of data-driven service components, and an adapted organizational structure for data-driven services [59]; dynamic capabilities as the skills, procedures, organizational structures, and decision rules that firms utilize to create and capture value [60]; management and leadership style, resource planning, organizational culture, organizational structure, corporate strategy, innovation strategy, vision and goals of the organization, strategic decision-making, utilization of technology, technical skills, education technology strategy, knowledge management, employees'

motivation, skills, education, personalities, and training, and innovation processes [61]; risk avoidance, incorrect measures (e.g. higher cost than anticipated), product defects, poor timing, inadequate sale effort, managerial incompetence, and a lack of technology base [27, 62]; bureaucracy, arrogance, the loss of executives' capacity, poor planning, too short investment horizons, inadequate skills and resources, and even because of pure bad luck [5].

External factors: institutions, like the education system, the financial system or the public policy for research and development [63]; national systems of innovation [26]; external events [27]; market environment factors [30]; patent protection, market size, customer needs, distribution channels, competition, and government regulations [34]; market factors [36]; identified target markets [64]; institutional factor [65]; consumer preferences [66]; external organizational environment: needs, wealth and urbanization [46]; a relevant social network [49, 50]; entering alliances [67]; market attractiveness [e.g. 1, 30, 57]; and competitive reaction and inadequate distribution [27, 62].

Both environments: sectoral specialization patterns, networks and information flows [26]; technology and financial resources [27]; strategic factors [30]; networks [37]; using external knowledge [55]; use of external networks and cooperation [58]; funding and resources [64]; economic factor [65]; financial factor [66]; and inadequate funding or market analysis (e.g. insufficient market) [27, 62].

We consider that the lack of market orientation and problems with market and marketing research is the main critical factors for failure. As Carbon [9] explained, it is very difficult to find the right people to do reliable market research because all the possible participants present biased perceptions: the development experts cannot be neutral in relation to the product's assessment; potential consumers often do not understand the nature of the innovation, and they are naturally resistant to innovation, because they usually prefer products that they already know how to use. On the other hand, the consumers might prefer what they know, but they are always searching for something new and exciting, as long as they feel self-efficacy using the product [68]. People need to be familiarized with the new product in order to have a right perception of its usefulness, what is harder to achieve in early market research [9]. Moreover, Christensen argued that no one can know in advance how or how much a disruptive product can or will be used [5]. Thus, he defended a new marketing approach–agnostic marketing–based on discovery-driven market activities to create knowledge about new customers and their needs in order to be a pioneer.

8.3   Methods

In order to answer the main research question (what type of paths to success is followed in innovative organizations?), we decided to do a survey among large and medium organizations in Portugal, because they have probably more resources to innovate in a continuous way [1, 2].

We used a database (https://sabi.bvdinfo.com/) that has information from 800 thousand Portuguese organizations. We chose the 6000 larger ones to send the questionnaire. These organizations include all the largest in the country (1202 in 2017, https://www.pordata.pt/Portugal/Empresas+total+e+por+dimensao-2857-246183), being the others of medium and small size.

The questionnaire had only 15 questions so as not to alienate respondents due to a very long and time-consuming one. We asked for the main economic activity of the organization (following the National Classification of Economic Activities), its size (large, medium, small), the job position of the respondent, the number of new products (goods, services, ideas, experiences) launched in the market in the last 5 years (sample inclusion criterium), how many of them were successful [48], what reasons are pointed out for unsuccess cases, and how many products presented the following paths to success (Fig. 8.2):

A—Idea → Information gathering → Business Model (product, price, distribution, communication, processes, partnerships, team and purposes) → Product launch → Success.

B—Idea → Information gathering → Business Model → Idea redefinition → Collecting more information → New business model → Product launch → Success.

C—We followed the process A, but after result analysis, we had to go backwards, reformulate the business model, and relaunch the product with success.

D— We followed the process A, but after result analysis, we had to go backwards until the initial idea, which was reformulated with more information gathering, a new business model, and relaunch the product with success.

E—We followed other kind of process to achieve success. Please, describe this process.

After two rounds of survey, we have obtained a response rate of 5%. There were 643 organizations that we cannot access, because the email was returned saying that the address is no longer active; 15 send a response saying that they did not want to answer; 130 sent an automatic response; and 33 sent a positive response saying that they were going to answer. Thus, we received 267 answers from 57 large organizations, 165 medium and 45 small ones. Their distribution in terms of economic sector is presented in Table 8.1 comparing to the national distribution.

The respondents had different positions in the organizations: general manager (95), chief financial officer (46), research and development director (37), department director (29), marketing director (18), director of environmental quality and safety (13), industrial director (11), chief information officer (7), human resources director

Fig. 8.2 Paths to success
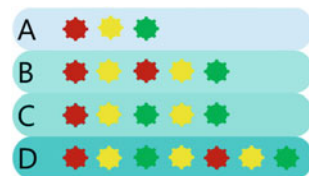
Table 8.1 Distribution of the organizations by economic sector

Economic sector	Country (%)	Sample (%)
Agriculture, animal production, hunting, forestry and fishing	10.7	3.4
Extractive industries	0.1	0.0
Manufacturing industries	5.4	27.0
Electricity, gas, steam, hot and cold water and cold air	0.3	4.5
Water collection, treatment and distribution; sanitation, waste	0.1	7.9
Construction	6.6	4.5
Wholesale and retail trade; vehicle repair	17.6	10.1
Transport and storage	1.8	7.9
Accommodation, catering and similar	8.4	2.2
Information and communication activities	1.4	2.2
Real estate activities	3.3	2.2
Consulting, scientific, technical and similar activities	10.1	1.1
Administrative and support service activities	14.2	2.2
Education	4.6	0.0
Human health and social support activities	7.6	4.5
Artistic, show, sports and recreational activities	2.9	1.1
Other service activities	4.8	13.5

(5), product manager (4), and innovation and strategy manager (2). Data analysis was made by descriptive statistics.

8.4 Results

When the organizations were asked about how many new products were launched in the last five years, 44 of them said that they did not launch any product. In the other 223 organizations, this value ranged from 1 to 100 with an average of 12.47 (SD = 21.77). It this sample one had 2769 new products launched, and 1821 (65.8%) were considered successful.

It is possible to summarize the reasons presented by the respondents for failure in the market: lack of adjustment to customers' requirements (36.1%), economic unfeasibility (2.8%), price too high (13.9%), ignorance of the market (16.7%), lack of resources and internal support (16.7%), financial instability in destination markets (2.8%), a lot of competition (2.8%), and there has not yet been enough time for evaluation (8.3%).

The paths for success presented the following distribution: A—55.2%; B—16.6%; C—11.9%; D—11%; and E—5.3%.

The path E included types of product development that depends on compliance with legislation (public products), or on-demand production of a product based on customers' own specifications (B to B products).

In addition, we asked participants to tell us how many new products, beyond to their economic value, also had social, ecological and/or psychological value. Social value was presented as the ability to have a positive impact on the community (social well-being, social cohesion, nutrition, shelter, health, social equity or quality of life). The ecological value would be the ability to contribute to the preservation of natural capital (environment, planet or biodiversity). And finally, the psychological value would be the ability to influence or transform the lives, mentalities, knowledge, skills or behaviours of some consumers, clients or users [69]. The results showed that 71.8% of the new products launched presented social value, 49.5% ecological value and 43.8% psychological value, confirming the tetrad-value theory [20].

8.5 Discussion and Conclusion

The main reasons presented by respondents are in accordance with the literature. The lack of adjustment to customers' requirements was mentioned in many studies [e.g. 28, 29]. Other factors are economic unfeasibility [e.g. 27, 34, 62], problems with marketing mix [e.g. 31, 32], ignorance of the market [9, 58], lack of resources and internal support [33–46], financial instability in destination markets [e.g. 30, 36] and a lot of competition [27, 62].

We can conclude that 16.6% of the innovative products with success followed a path that implied to reformulate the idea or the business model, or to redo the market and marketing research. More, 22.9% of the products launched needed to redo all or part of the process to be relaunched with success. Of course, all this repetition of activities implies more development costs for the organizations. As such, it will be very important that organizations try to do more efforts in what concerns being market oriented, enhancing their processes to collect, disseminate and analyse information, with good cross-functional coordination to achieve the best response to the market [29, 70].

There are several limitations in this study, namely related to the sample, which is not representative of the business fabric in Portugal, as well as the use of an online questionnaire. However, this exploratory study aimed at confirming the existence of different paths to success with new products. The TOP model is based on the literature and illustrates the corner points where an organization may have the need to rewind their development steps until achieve success in the market.

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Chapter 9
Bibliometrics and Science Mapping of Digital Marketing

Marcelo León-Castro, Homero Rodríguez-Insuasti, Néstor Montalván-Burbano, and José Avelino Victor

Abstract This research paper focuses on marketing areas and specifically in the field of digital marketing. Marketing and other commercial endeavors are of the utmost importance for both companies and professionals in this field. The current research aims to determine how influencers persuade internauts in their consumption initiatives. Bibliometrics and science mapping are at the core of this study, and the yielded metrics highlight details that empower strategies and tactics in digital marketing. Thoroughly designed messages delivered by influencers can increase the visualization of companies enhancing their brands and positioning their products above the competence. Researchers can also use the positioning strategies presented here to promote the visibility and impact of their publications, a use that has not been explored yet.

M. León-Castro (✉)
Universidad Nacional de Loja, Loja, Ecuador
e-mail: marceloleon11@hotmail.com

H. Rodríguez-Insuasti
Department of Marketing, University of Valencia, Valencia, Spain
e-mail: hmrodriguez2008@gmail.com

Facultad de Ciencias Administrativas, Universidad Laica Eloy Alfaro de Manabí, Bahía de Caráquez, Ecuador

N. Montalván-Burbano
Management and Business Department, University of Almería, Almería, Spain
e-mail: nmb218@inlumine.ual.es

Centro de Investigación y Proyectos Aplicados a las Ciencias de la Tierra (CIPAT), ESPOL Polytechnic University, Guayaquil, Ecuador

J. A. Victor
Polytechnic Institute of Maia, Maia, Portugal
e-mail: javemor@ismai.pt

9.1 Introduction

The emergence of the first personal computers along with the Internet did a significant change not only on people's lifestyles but also in the economy of the countries. The first documents on network interaction appeared at the end of the 50s. Internet, as it is known now, is established in the 80s. In the 90s, the World Wide Web or www was introduced and with it, the web 1.0 which was characterized by being a static web, of individual intelligence, with outdated tools, and no interaction [1]. After a while, web 2.0 emerged. Dale Dougherty named this web as the social network in a conference in 2004 (Web 2.0, 2019) and it was characterized for being a dynamic web, with a collective intelligence, and full of social interaction [1] And this latest, impacted society and the business world up to now [2].

Thanks to the features mentioned above, the web 2.0 gave birth to social media (SM) or the social networks. Every day, more and more people share or seek information about a product or service, which has transformed the way people interact [3]. Social platforms have not only become a means of communication, but they have become an important part of the strategies of marketing in terms of promotion and online advertising. The social network has proven to be very efficient promoting products online. This type of marketing has become even bigger with the creation of active advertisements by the concerned parties [4–6].

Thanks to the emergence of social networks (SN), a new type of communication has emerged along all media [2]. The so-called influential people or independent sponsor models certain public behaviors through blog comments, tweets, and social networks in general. Although there are divided opinions about the true role of the influencers [7], for some people an influencer needs to have a large number of followers, a smartphone and an account on some social network. However, influencers are not famous people but ordinary people who have endeavored to share fresh and interesting content that entertains or educate other people [8].

This research paper justifies its interest and importance in marketing areas, specifically in the field of digital marketing. Firstly, because this issue is of the utmost importance for both, companies and marketing professionals. The results can help to determine the characteristics and the way the influencers intervene in the purchases as well as to maximize the strategies and tactics in digital marketing campaigns. Secondly, through the image and the message conveyed by the influencer, companies can offer a positive image on their new brands and products, or do a repositioning job. Third, the results will help potential researchers as a guide to lead them to issues that have not yet been explored. Regarding this, results can help them in their intention to publish a high-impact journal. Fourth, this issue is among the priorities of the Marketing Science Institute (MSI) 2018–2020 as referring to it as "the cocooning landscape martech (marketing and technology) and advertising."

In light of the ideas expressed above, this literature review work tries to provide answers to the following questions:

A1: Which journals are citing works concerning influencer?

A2: Which journals and authors are the most prominent at co-citations?

A3: What has been the development of these investigations over time?
A4: Which countries have been interested in influencer issues?

9.2   Methodology

9.2.1   Bibliometrics and Science Mapping

Bibliometric analysis is a set of tools that uses quantitative approaches and aims to examine and measure text and information [9, 10]. These analyzes allow obtaining additional information of the literature reviews, so that the information can be considered as a complement to the research [11, 12]. In order to do so, it is necessary to establish publications profiles on a theme, detect trends within a scientific branch, evaluate scientific activities that act as a guide to know the status of a research [13, 14]. Among the most commonly used bibliometric techniques are the co-citations, co-words, co-occurrence of keywords, and co-authorship analysis [15, 16]. In this work, the co-citations analysis was considered. The co-citations follow this method. When two publications are cited in a third publication, and this latest one cites both; the higher number of citations proves the relationship between two publications [15, 17]. This can serve as a theoretical and empirical foundation for various studies [18]. For a better understanding of the co-citations, the bibliometric analysis was complemented with science mapping since they allow to reveal the intellectual structure of the field of study and its dynamics [19, 20]. Consequently, the study of the academic field requires an accurate analysis of literature, a process that consists of four steps.

9.2.2   Source of Information

The first step is an exhaustive search in the Clarivate Analytics Web of Science Core Collection database (formerly Thomson Reuters) considered one of the most used database for research purposes, and a wide source of scientific journals [21]. The information search was carried out in July 2019, using the descriptors "influencer", "ewom", "youtube *", "instagram", "facebook". This allows us to obtain all papers in which the descriptors are interacting. The period of examination is open until 2019.

9.2.3   Exclusion

The second step was to define criteria for proceeding to an exclusion of the documents. In this way, it was possible to ensure the quality of information analyzed. Books, book chapters, reports, and conference proceedings were excluded due to the variability

in their respective peer review processes. Only scientific articles were used, as these are subject to rigorous and blind peer reviews. Also, they are considered as a certified source of information [22]. 166 articles were obtained as a result. Among this number, 4 articles that are not written in English were eliminated. The final information data consists of 162 articles.

9.2.4 Data Cleaning

The third step includes data-debugging. The information obtained includes hundreds of data from different variables such as authors, countries, and institutions. For this reason, it was necessary to preprocess the data with the intention of minimizing possible errors [12, 16]. For this purpose, the file was converted to txt format to eliminate repeated information. In the case of authors, the repeated information was debugged by taking into account the existence of a same author written in different wording (e.g., "kaler, j" and "kaler, j."). In the case of countries, adjustments were made as Scotland appears as UK.

9.2.5 Software Selection for Bibliometric Analysis

The data obtained and preprocessed from the database obtained have been processed in Microsoft Excel software for the realization of two-dimensional tables and graphs. The co-citation and co-author analyzes were used by the Vosviewer 1.6.10 software developed by the Center for Science and Technology Studies (CWRS), of the University of Leiden (Netherlands). This software allows the extraction of terms for the construction, exploration, and graphic representation of two-dimensional distance maps or commonly known as science mapping [19, 20].

9.3 Analysis of Results

9.3.1 Performance Analysis

The topic related to influencers seems to show a growing interest within the academic world. It exhibits 162 related articles, 95 academic journals, 419 authors, and 7100 reference authors. These results are shown in Fig. 9.1, taking into account the period between 1986 and 2019.

Decade 80s (1980–1989). Although the established interval was between 1980 and 1989, the first record that we have of when the term influencer appears in the work entitled "New Product adoption by the buying organization: Who are the real
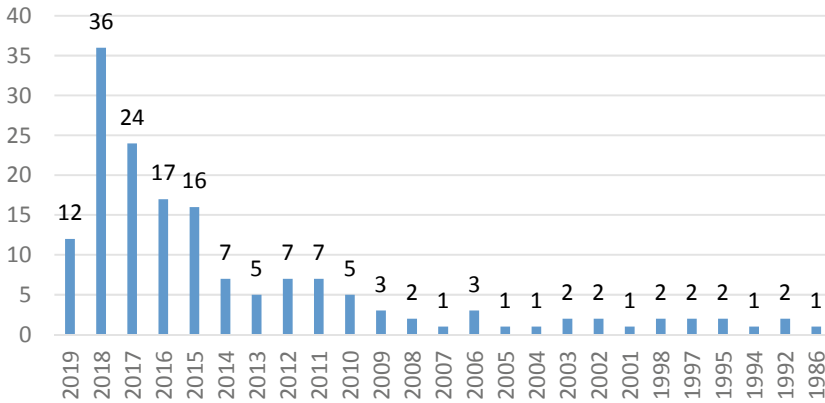
Fig. 9.1 Sources of information 1986–2019 (*Source* Web of Science)

influencers?" [31], whose roles and its influence on the members of a purchasing center are explored based on organizational behavior.

Decade 90s (1990–1999). There is a boost in the subject. It was identified nine research papers, which were referring in journals specialized in marketing, such as Journal of Marketing Research, Journal of Consumer Research and Business journals: Journal of Business Research, Strategic Management Journal and Journal of Business and Psychology. These documents address the role that the influencer plays in success or failure in an experiential asset [23], the performance of the entertainment services market [24] or the influence exercises have on performance, satisfaction and trust [25]. In this decade, we can mention the greater access to electronic devices, due to the reduction in prices of personal computers and a strong market Internet access by telephone lines.

Decade 00s (2000–2009). In the first decade of the new century, 16 works could have been noticed, that is to say, almost double than last decade. The trend of Academic Journals related to Marketing and Business is maintained.

Decade 10s (2010–2019). In the present decade, there is an accelerated increase in research works. From 2014 until almost the middle of this year, there were 12 research works registered.

9.3.2   Contributions by Country

In the same way, in this section we wanted to know which countries have been leading this type of work and to know which countries are in the top list regarding this subject. In Fig. 9.2, it can be noted that the United States has initiated the research work in this area and led this research work for a relatively short period of time, according
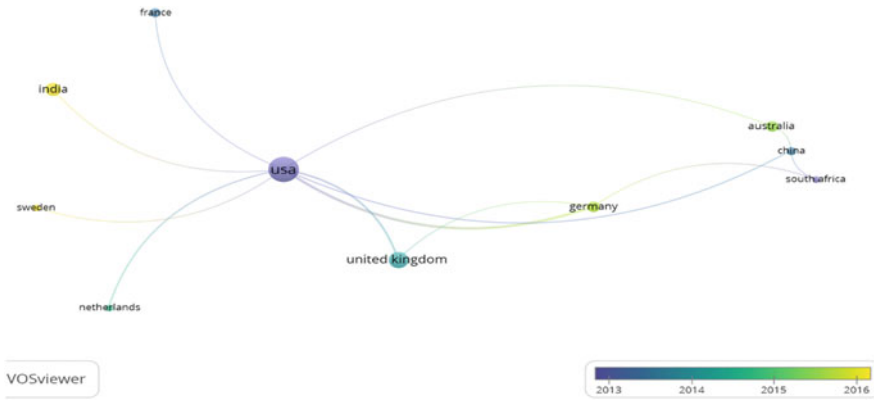
Fig. 9.2 Contributions by country (*Source* Web of Science)

to the results obtained. However, the investigations are currently been led by India, Sweden, Germany, and Australia.

9.3.3 Performance of Academic Journals

162 articles have been published in 95 academic journals. Table 9.1 shows academic journals that have three or more articles related to the subject. The Journal of Business Research, Public Relations Review, and International Journal of Advertising lead the findings.

Table 9.1 Most cited academic journals

Journal	Number of items
Journal of Business Research	9
Public Relations Review	7
International Journal of Advertising	5
Journal of Consumer Behavior	5
Journal of Marketing	5
European Journal of Marketing	4
Journal of Business Ethics	4
Journal of Marketing Research	4
International Journal of Bank Marketing	3
International Journal of Online Marketing	3
Journal of Advertising	3
Journal of Marketing Management	3

Source Web of Science

Table 9.2 Most cited Academic journals on business topics

Academic Journals	Quotations
Journal of Marketing	872
Journal of Service Research	374
Journal of Marketing Research	370
Internet Research	311
Journal of Business Research	282
Strategic Management Journal	242
Journal of Consumer Research	142
Journal of Business Ethics	132
Journal of Advertising Research	105
Journal of The Academy of Marketing Science	101
Public Relations Review	93
International Journal of Advertising	90
Mit Sloan Management Review	58
Industrial and Corporate Change	52
Journal of Product Innovation Management	43
International Business Review	42
International Journal of Electronic Commerce	37
Journal of Macromarketing	34
International Small Business Journal-Researching Entrepreneurship	31
European Journal of Marketing	29

Source Web of Science

9.3.4 Analysis of the Citations

In the field of business research, three marked groups of journals could be established as the most cited (see Table 9.2). In the first place, the Journal of Marketing (872) equals to 22.9% of the total citations and secondly, the Journal of Service Research (374) and Journal of Marketing Research (370) with a total percentage of 19.5%. Finally, there is a third group consisting of Internet Research, Journal of Business Research and Strategic Management Journal with a percentage of 21.9%.

9.3.5 Bibliographic Links of Academic Journals

It shows the intertextual relationship between publications. This allows current trends and research information be obtained [12]. For this purpose, the Vosviewer program was used. It shows 84 academic journals that display 833 relationships between them in nine color-differentiated clusters (shown in Fig. 9.3).

- Business Area (Red Cluster): Grouped by 24 journals of the business areas. The most noticeable are: Journal of Business Ethics, International Journal of Bank Marketing and the Journal of Product Innovation Management.
- Marketing and Services Area (Green cluster): Consist of 12 journal related to the marketing and services area.
- Consumer Behavior and Marketing Area (Blue Cluster): Consist of 11 journals, among the most important research is the Journal of Consumer Behavior.
- Marketing and Administration Area (Yellow cluster): Consist of 10 journals. Journal of Marketing, Journal of Marketing Research and Business Horizons are highlighted by number of their contributions.
- Marketing, Business and Market Research Area (Purple Cluster): Consist of 9 journals. Within this division are considered International Journal of Advertising, International Journal of Electronic Commerce and Marketing Intelligence & Planning.
- Entrepreneurship Area (Light blue cluster): Consist of 7 journals. The most important are the Industrial Marketing Management, Emerging Markets from a Multidisciplinary Perspective: Challenges, Opportunities and Research Agenda and Entrepreneurship.
- Business and Marketing Area (Orange Cluster): It shows a new combination between the mentioned areas, distinguishing the importance of these two fields of knowledge. The journals that are within this cluster are Journal of Business Research, Journal of Social Marketing and Construction Management and Economics.
- Marketing and Finance Area (Brown Cluster): Consist of 3 journals: International Journal of Online Marketing, Journal of Financial Services Marketing.
- Advertising and Retail Area (Violet Cluster): Consist of 3 journals: Journal of Advertising Research, Journal of Retailing and Psychology & Marketing.
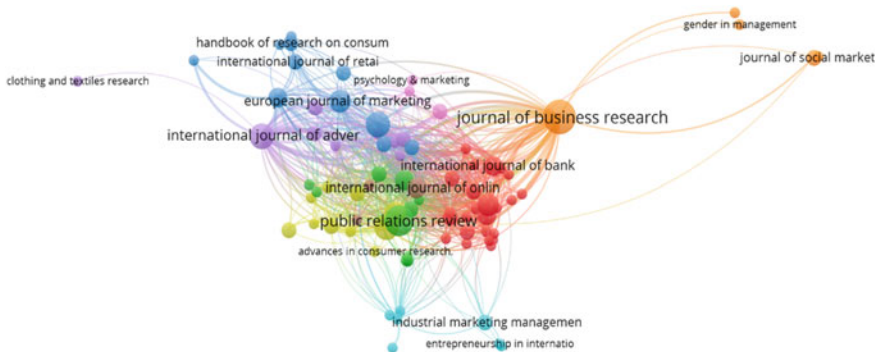
Fig. 9.3 Analysis of the citation (*Source* Web of Science)

9.3.6 Co-citation Network of Authors

The approach of authors' co-citation allows analyzing the connections between the authors and how this intellectual structure is organized. The results showed a total of 7100 references, which was established as a parameter in the creation of the bibliometric map (the reference authors are cited at least 10 times). We obtained 46 authors. The objective of using this amount was to facilitate the visualization of the data. This type of association was already been done in other works [26–28].

According to Leung et al. (2017), the sizes of the nodes show the number of citations of the articles [28]. The width of the lines, the strength of the co-appointment links. The link and the proximity show the relationship between two co-appointments. The color of the nodes indicates the group to which the article belongs. Additionally, in each node only the name of the first author is labeled.

In Fig. 9.4, seven clusters were formed. The first group consists of 12 authors and the most relevant is Hennig-thurau (21 citations). In group two, there are 11 authors and the most outstanding is Bagozzi (31 citations). In group three, there are 7 authors and the most notable is Fornell (24 citations). In group four, there are 5 authors and Moschis (15 citations). Group five is comprised by 4 authors, being Berger the most
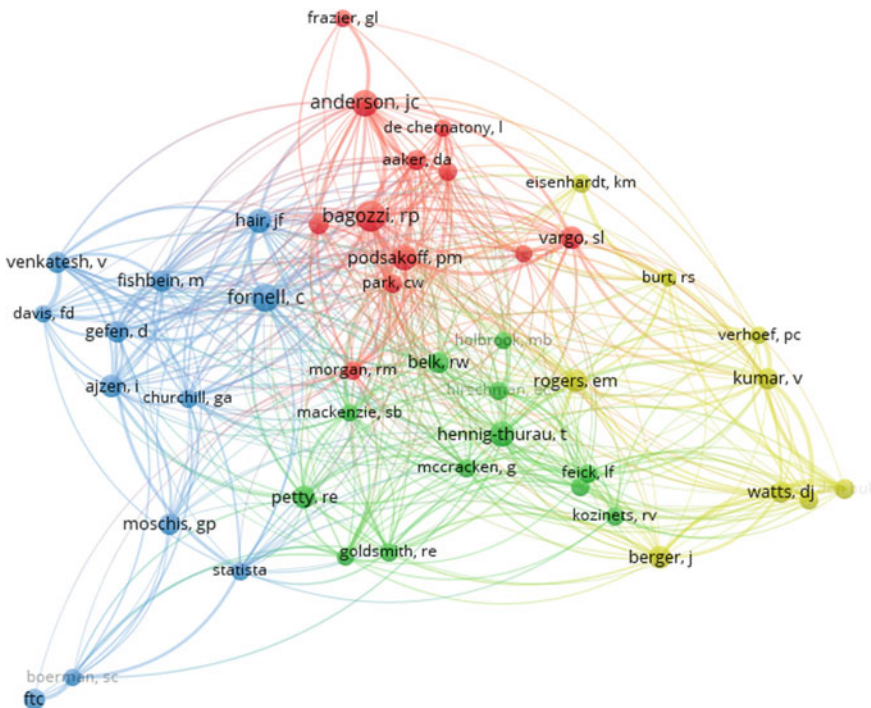
Fig. 9.4 Reference author co-citation network (*Source* Web of Science)

important with 16 citations, and finally groups six and seven with three authors each one, where Anderson stands out (23 citations).

9.3.6.1 Analysis of Co-citation Network of Academic Journals

To try to identify the most important sources of publication and determine how they are related to each other, this analysis is performed using scientific journals that have at least 20 or more citations. In the perspective of Chandra (2018), it is easy to identify five groups of citations from scientific journals (see Fig. 9.5) that are very broad and diverse [29]:

i. Consumer Behavior—Advertising (Journal of Consumer Behavior, Young Consumer, Journal of Advertising, International Advertising, Journal of Consumer Psychology; red circles).
ii. Administration—Marketing (Academy Management Journal, Administrative Science Quarterly, Academy of Management Review, Harvard Business Review, International Marketing Review, Journal of Marketing, Journal of International Marketing, Journal of the Academy of Marketing Science; green circles).
iii. Computer Science—Marketing (Computer in Human Behavior, European Journal of Marketing, International Journal of Electronics and Communications, Internet Research, International Journal of Bank Marketing, celestial circles).
iv. Marketing—Administration (Journal of Business Research, Industrial Marketing Management, Journal of Business Ethics, Journal of Business & Industrial Marketing; yellow circles).
v. Marketing (Journal of Marketing Research, Journal of Retailing, International Journal of Research in Marketing; purple circles).
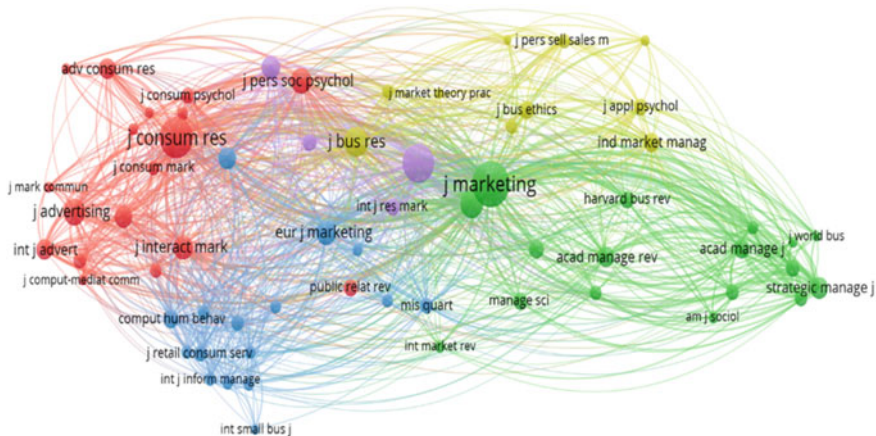
Fig. 9.5 Academic journals co-citation network (*Source* Web of Science)
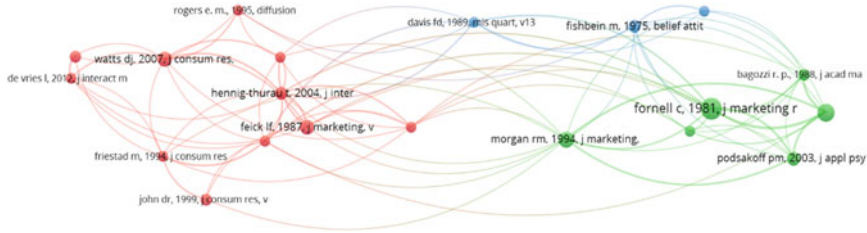
Fig. 9.6 Co-quotes based on the author (*Source* Web of Science)

9.3.6.2   Analysis of Co-citation Based on the Author

In order to carry out this work, authors' names were classified along with the years of publication as well as the name of the journals. For this process, it was used the option of references cited in the Vosviewer program and a process similar to the one used by [14]. These authors cited at least 20 publications. Although in this case, a minimum number of 6 citations were used in a cited reference. The logic behind this was that a larger reference amount resulted in a smaller number of associated relationships. Following this process, three groups could be obtained. In the first group, it was possible to identify: consumer-marketing research (Watts, Friestad, McCracken, John, Feick, Arndt; red circles). In the second group, marketing-psychology (Fornell, Morgan, Bagozzi, Anderson, Podsakoff; green circles), and in the third group: various studies (Davis, Fishbein, Glaser, blue circles) (Fig. 9.6).

9.4   Conclusion

Bibliometric methods are a very powerful tool, that allows quantitative confirmation of the categories, which are subjectively derived in published reviews, the exploration of new research scenarios as well as the identifying of the categories studied [12]. The results obtained from this bibliometric analysis open a window that will help researchers in digital marketing areas to understand the evolution and history of academic works. It also allows the changes in the different co-cited academic groups, the frequency of citations in different journals of research and the countries that are most interested in this subject.

In this section, we answer the questions proposed at the beginning of this research in an attempt to contribute to the subject about influencers in digital media.

The development of this research also concludes that this topic had a very slow start during the first 23 years; from 2010, the statistics show a gradual increase until the 2015 when the topic about influencers has a quick access in the last four years.

Finally, it shows the main countries that have worked on this subject, as well as the countries that today show a greater interest in this area. For instance, in Europe

we have Sweden and Germany. In Oceania Australia and in the Asian continent, we see India.

Currently, the American continent does not have any representation according to the works found in the Web of Science, although the USA was the first country to initiate this type of research work. Lastly, it is important for Latin American countries to increase research on how influencers get their messages across to their followers. For companies, this form of communication can help them to be more efficient in their communication campaigns and to know the reactions of their followers to these campaigns.

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Chapter 10
The Application of Text Mining for the Analysis of Connotation in a Higher Education Institution

Bruno Varela, Jorge Bernardino, and Isabel Pedrosa

Abstract Twitter, as a social media, acquires special importance in academic institutions, such as promoting higher education institutions (HEIs). This tool allows not only to disseminate its work and know its feedback, but also to keep in touch with its alumni network and foster conversations between the academic communities. In this work, 118 tweets were extracted directly from Twitter, and a method was developed and applied that allows understanding the polarity of the tweets that mention a HEI, with three criteria: favourable, unfavourable and indifferent. In comparison with other methods, this model is an association of an individual assessment with a systematic assessment of terms, using linguistic tools. It is noteworthy that the method achieved about 67% of success.

10.1 Introduction

In the present Information Age in which we live, institutions, whatever their nature, need to have a presence on social networks to remain competitive. However, this presence is not always achieved in the best way, being quite common, the misalignment between publications and the real strategy of the organization [1] or the failure

B. Varela (✉) · I. Pedrosa
Coimbra Business School | ISCAC, Polytechnic of Coimbra, Polytechnic of Coimbra, Quinta Agrícola – Bencanta, 3045-231 Coimbra, Portugal
e-mail: a2019117953@alumni.iscac.pt

I. Pedrosa
e-mail: ipedrosa@iscac.pt

J. Bernardino
Instituto Politécnico de Coimbra – ISEC, Coimbra, Portugal
e-mail: jorge@isec.pt

i2A – Instituto de Investigação Aplicada, Lagar dos Cortiços, 3045-093 Coimbra, Portugal

I. Pedrosa
ISCTE - Instituto Universitário de Lisboa, ISTAR-IUL, Avenida das Forças Armadas, 1649-026 Lisboa, Portugal

to use all the potential of these tools [2]. The objective of the present study is to develop a method that allows a connotation analyses of the tweets that mention the HEI. In this way, a method of latent semantic analysis (LSA) was applied, which can be defined as a "method to extract meaning from contextual use of words by statistical calculations applied to a large corpus of text" [3]. The remaining of this paper is structured as follows. In Sect. 10.2 is presented literature review and related work. Section 10.3 explains the methodology used to extract and analyse the tweets and the evaluation criteria for tweets. In Sect. 10.4 were created the three criteria to analyse the tweets and a representation of the process. In Sect. 10.5, an individual approach to assess the tweets was made, according to the criteria defined in the previous session. Also, two datasets were developed for comparison with the terms of favourable and unfavourable connotation. This session includes a description of the data transformation commands applied. Last sections are devoted to results, discussion, conclusions and future work.

10.2   Literature Review

Text mining can be defined as an "interdisciplinary field of activity amongst data mining, linguistics, computational statistics and computer science" [1], having in common one characteristic: text as input. There are several well-known techniques in the field. One of them is text classification (TC), which can be seen as "manually building automatic TC systems by means of knowledge engineering techniques" [2]. Other technique is text clustering, which can be defined as "the process of grouping documents with similar contents or topics into clusters to improve both availability and reliability of text mining applications such as information retrieval, text classification and document summarization" [3] that can be used to structure large sets of text or hypertext documents [4]. Another technique in text mining is the diagnosis ontology, given that an ontology is an "information model that explicitly describes various entities and concepts that exist in a domain of discourse along with their properties" [5]. Latent Semantic Analysis is also a technique used to extract meaning from statistical calculations applied to a large corpus of text [6]. It can also be a model where latent topics of documents are inferred from estimated probability distributions over a training dataset [7].

From the application of text mining techniques, it is possible to construct a sentiment analysis. Being this an area, which deals with judgments, responses and feelings, known to be extensively used in fields like data mining, web mining, and social media analytics. Always taking into consideration that sentiments are the most essential characteristics to judge the human behaviour [8]. Another definition for sentiment analysis is a way of contextual mining of text which identifies and extracts subjective information in source material and helping a business to understand the social sentiment of their brand, product or service while monitoring online conversations [9]. One of the main objectives of this field of study is to understand sentiments

related to a certain brand. In order to give a better understanding of the named areas, in sequence is shown application example.

In [10], the Dirichlet allocation modelling algorithm was applied for an eco-hotel, this being evaluated using text mining tools, with several sources of information for the different comments from clients. The algorithm used can be characterized as a Bayesian probabilistic model of text documents that allows text classification [11]. Thus, it was possible to identify the strengths and points to be improved in the hotel under study. For instance, hotel food generates positive sentiments, while hospitality generates both ordinary and strong positive feelings.

In [12], a text mining approach was applied to model the score given by users in the TripAdvisor website. This data was extracted manually, giving the result of 504 reviews published in 2015 for a sample of 21 hotels located in the USA, Las Vegas. This model made it possible to draw a better profile of users because it allows the analysis of comments according to the user's profile and the date of the review. It was also identified that the day of the week of the review can influence the score given by the user.

In [13] was studied the importance of microblogging—which can be defined as "the activity of sending short messages to any user, especially from a mobile phone" [14]—in the marketing form of word of mouth (WOM). The WOM communication form has two aspects, one more traditional, that happens offline, and another that happens in a virtual environment; this second one can be defined as a "statement made by potential customers, actual customers or about a product or company, made available to a variety of people and institutions through the Internet" [15]. So, in this study 650 tweets from 50 brands were extracted, in a period of 13 weeks, between 4 April and 3 July 2008. There was space for a comparison between automated methods of classify feelings in microblogs with manual coding and auto-tagging. This comparison did not show significant differences between the two approaches. Yet as for microblogs, the structure and composition were analysed proving that microblogging is an online tool for customer WOM communications and has direct implications for corporations as part of their marketing strategy.

In [16] was developed a tool that makes it possible to find, in an automatic way, the keywords of scientific articles. This tool was developed based on the Dendro platform, this being a data management platform focused on "early stages of research, being designed to offer researchers a collaborative environment to store and describe datasets using the descriptors of more suitable metadata from a set of ontologies existing" [16]. Given this, methods based on multicriteria analysis, such as the Inverse Document Frequency (TF–IDF) which measures the number of times a term occurs in a document or C-Value that allows a hybrid approach to term extraction, can be used both at the level of statistics and linguistics. The main result of this study was the development of the tool designed to assist data curators in the process of creating an ontology for data description in Dendro platform [16].

In our case, text mining is applied to a HEI and the polarity of the tweets is analysed with three criteria: favourable, unfavourable and indifferent. This HEI is very active on social media, being one of the first having an account on Twitter. Having a strong

focus on the online social platforms, in consequence it is a necessary mechanism that allows a better understanding on the sentiments users have about the brand.

10.3 Methods

Several methods were used to write the current article. One of the methods employed was in the process of data collection was Documentary Research. First with the use of disseminated written documents [17], namely articles published with similar themes, to allow the context of this article in the state of art.

Then the Extraction, Transformation and Load (ETL) method was applied with the direct extraction of 118 tweets from 9 February to 10 August 2020 that mention the HEI in study [18].

Finally, the LSA technique was applied to perceive connotations associated with those of tweets. This comparison was made based on the counting of terms according to the connotation, and a score was associated with each tweet. The tweet was associated with the connotation that had the highest score. In the event of a tie, undifferentiated scores are associated. For this purpose, two datasets were created, one with the count of terms considered to have a favourable connotation and the other with the count of terms considered to be unfavourable. For this analysis are necessary existing lists of terms according to each connotation. The two lists of terms, for each connotation, were given by an already made study in the linguistics field that constructed these lists [19]. Some examples for substantives are the following:

Favourable: [alegria]; [beleza]; [bem-estar]; [carisma]; [diversão]; [paixão]; [talento]; [top]; [virtude].

Unfavourable: [chatice]; [defeito]; desastre]; [desconforto]; [desgraça]; [falhar]; [problema]; [sacrifício]; [superficialidade]; [vergonha].

And for verbs:

Favourable: [adorar]; [atrair]; [cativar]; [entreter]; [inovar]; [recomendar]; [sensibilizar]; [simpatizar]; [valorizar];.

Unfavourable: [abandonar]; [arrepender]; [assustar]; [atrapalhar]; [complicar]; [decepcionar]; [desanimar]; [enganar]; [irritar [limitar]; [odiar]; [pecar]; [perder]; [prolongar]; [revoltar].

10.4 Creation of Polarity Assessment Criteria

In our case, 118 tweets were extracted directly from Twitter, aiming to apply a method that allows understanding the connotation of the tweets that mention HEI. In this way, for the analysis of the connotation of the tweets, three criteria were elaborated. The objective, in the process of creating these criteria, would be that all the extracted tweets could be classified under these criteria.

Table 10.1 Rating criteria for tweets

Criteria	Example	Description
Unfavourable	1	Reference to coarse vocabulary and irony. The user shows a negative opinion about the institution
Favourable	2	The user shows a positive opinion about the institution. Refers to praise, conferences or meetings
Indifferent	0	Text too wide/vague or imperceptible to have an associated connotation

The first criterion is related to tweets with a "favourable connotation". Tweets were catalogued, with this criterion, in which the user shows a positive opinion about the institution, referring to praise, conferences or gatherings. The second criterion is related to "unfavourable connotation" tweets, with reference to coarse vocabulary and irony. In tweets catalogued in with this criterion, the user shows a negative opinion about the institution.

Finally, the last criterion is tweets of "indifferent connotation", with content considered to be too broad / vague or imperceptible to have an associated connotation. Table 10.1 "criteria for assessing tweets" shows a summary of the created criteria.

10.4.1   Model Representation

In order to allow a better understanding of the model, a representation of it was elaborated. The Dataset1 contains the terms identified as favourable, and the Dataset2 contains the unfavourable ones. For instance, the occurrence of a term in the Dataset1 [19] may present a favourable opinion about the organization in study. So, according to the model the variables are:

P+: Count of tweet terms present in Dataset1.
P-: Count of terms in the present tweet in Dataset2.

The conditional statement must be:

If (P+ > P-; "Favourable");
Else If (P+ < P-; "Unfavourable");
Else ("Indifferent")

A representation was also created in the model in Unified Modeling Language (UML), shown as "model representation" (Fig. 10.1).
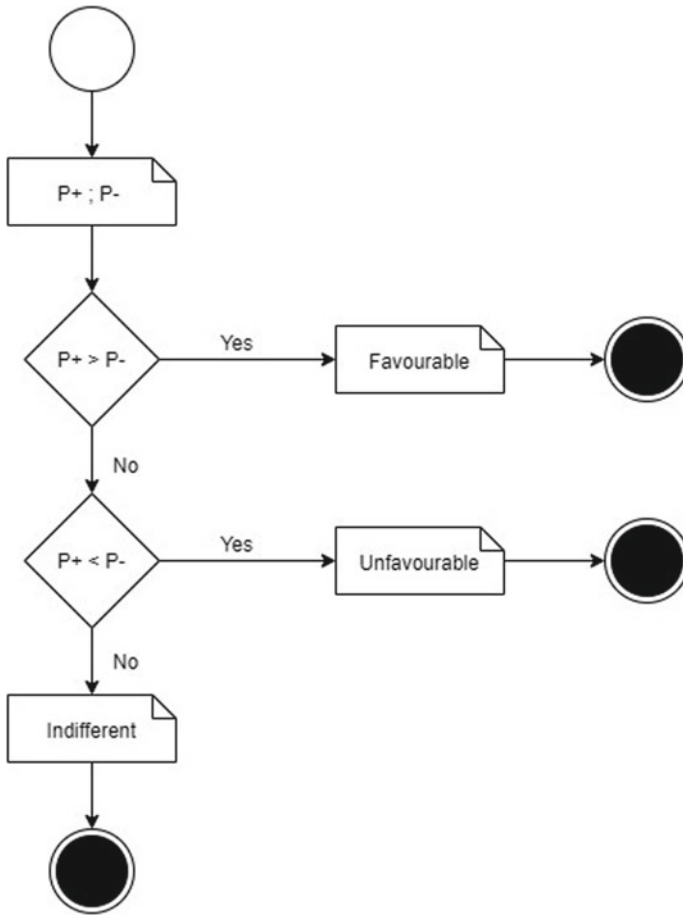
Fig. 10.1 Model representation

10.5 Application of Criteria for the Evaluation of Tweets: Personal Approach

In this step, an individual assessment was made according to the pre-defined criteria in the previous topic. To the cataloguing of tweets by the three types of connotation was added a individual survey of the terms the justified the given evaluation. That is, for example, if one evaluates the tweet as unfavourable, this terms that justified classification was extracted. This step is only available to those who have some knowledge of linguistics, such as knowing the morphological classes of words. However, even using linguistic rules, this step has some subjectivity, so it is recommended that the assessment be made by more than one individual. The result of this evaluation is shown in table "*Individual Approach Results*", with 63 tweets classified

Table 10.2 Individual approach results

Type	Count
Unfavourable	63
Favourable	34
Indifferent	

as favourable, 34 as unfavourable and 21 as indifferent. It is noteworthy that irony and sarcasm expressions are the most subjective phenomena related to linguistic analysis [20] and a human mind can more easily understand irony expressions than a text mining model. This step is important to measure the model's success at the end (Table 10.2).

10.5.1   Development of the Comparison Dataset

A search was made in some digital repositories to find a list of terms with positive and negative connotations in the Portuguese language. The Online Knowledge Library (B-On) and Google Scholar were used. However, at the time of preparing this project, no results were found in European Portuguese, this being the most common variation of the Portuguese language in the tweets that were under analysis. Thus, it was decided to use the list of terms developed in [19]. It is noteworthy that this list of terms was prepared considering the Portuguese language in its variant of Brazilian Portuguese.

Then, the terms justifying the personal approach phase were added. This step is applied mainly because of the Portuguese variation in the list and because it is a way to improve the model's performance. With this addition, it was necessary to apply the "Lower" commands again, so that the terms were in lowercase and "Remove Duplicates" to remove duplicates. The list of terms with a favourable connotation were 365 terms in the given list, with the addition it became 371. The same happened for the list of terms with an unfavourable connotation, being initially 219 terms, and with the addition the list had 236 terms. The terms added to the unfavourable connotation analysis were mainly expressions of highly coarse and offensive vocabulary. The terms added for the analysis of favourable connotation were, for example: "party", "protocols" and "socializing". These lists allowed the creation of two datasets, the dataset1 with the terms of favourable connotation and dataset2 with the terms of unfavourable connotation.

10.5.2   The Process of Tweet Extraction

To extract tweets directly from Twitter, it is necessary to have an account with permission to create an APP, which serves as a gateway for tweets. Then, in Power BI software, Power Query tool was used to build an M code, to be introduced in the Advanced

Editor. This step is only available to users who have some knowledge of programming languages. The code was applied in a blank query, giving the access token to APP. After entering the code, it is necessary to establish the search parameters. The institution under study can be referenced on Twitter in several different ways, so four parameters were established. Being the current article anonymous, the terms in which the tweets were extracted cannot be given. The higher education institution was known by an acronym. This acronym formed two of the research parameters, one in lower case and other in uppercase. The other two research parameters were the name of the HEI written in full: first parameter was the name in Portuguese and the second the name in English. This process resulted in the extraction of 118 tweets extracted directly from Twitter from 9 February to 10 August 2020 that mention the HEI.

Before elaborating a comparative analysis of terms with favourable and unfavourable connotations with the terms of tweets, it is necessary to apply some data transformation steps. The first concerns the division of tweets by space, thus dividing the tweet into terms, using the split command based on the spaces between the terms in the tweet. Then, the command "Lower" was applied to transpose the text to lowercase and facilitate the comparison of terms. A unique identifier was given for the tweets to simplify the tweets' identification.

10.5.3 Cross the Tweets with the Listings: The Model Approach

A matrix was created with the tweet and the frequency of terms. The headings of the matrix, or X-axis, are the terms with a favourable connotation, and the Y-axis are the no. of tweet. Thus, the frequency of terms for the connotations was counted and a score was assigned. For instance, for the Dataset1, a score was given to every tweet. This score represents the sum of the occurrence frequency of the terms with the favourable connotation (Table 10.3).

For the favourable, the maximum score was 3 and the minimum 0. For the unfavourable, the maximum was 3 and minimum 0. Table 10.3, "term score", shows an example of the application of the method with a sample of 4 terms from the 371 list of favourable terms. The columns of the Y-axis show the no. of tweets in which the count is made, and in the cells of the X-axis the terms of dataset1 with favourable connotation are shown.

As a result of this analysis, it was decided to define that the connotation to which the highest score would be attributed would be the associated connotation, when both the analyses of the favourable connotation and the unfavourable connotation were equal to zero, the indifferent classification was given. Applying subtraction or addition rules could lead to one variable nullifying the other, and thus biasing the analysis.

Table 10.3 Term score

No. of tweet	Innovate	Party	Protocols	Socializing	Total
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	1	0	0	1
5	0	0	0	0	0
6	0	0	0	0	0
7	0	0	1	0	1
8	0	0	1	0	1
9	0	0	0	0	0
10	0	0	0	0	0
11	0	0	0	0	0
12	0	0	0	0	0

10.6   Results

In comparison with the personal approach, the model achieved 68% success; that is, in 68% of the tweets it obtained results equal to those obtained in the individual evaluation phase.

Table 10.4 "comparison of model with personal approach" resumes the results. For individual analysis, 63 tweets were considered as favourable, and 34 unfavourable tweets and 21 undifferentiated tweets were obtained. For the analysis of the model, 58 favourable tweets, and 32 unfavourable and 28 undifferentiated tweets were obtained. To measure the model's behaviour for the different criteria, the error interval formula was applied, which corresponds to the difference between the maximum of the variables and the minimum of the variables. For the favourable, the interval was 5, for the unfavourable, the interval was 2, and for the undifferentiated, the interval was 7, so it can be said that the method had a worse performance for tweets classified as indifferent, having 25% more tweets than the individual analysis. This can be justified because the model always counts the terms in tweets. For the difference in the unfavourable criterion, the presence of irony can be a justification, which is difficult for a model to identify. Finally, for the favourable classification, more terms would be added to the list.

Table 10.4 Comparison of model with personal approach

Criteria	Model	Individual analysis	Error interval
Unfavourable	58	63	5
Favourable	32	34	2
Indifferent	28	21	7
Total	118	118	

10.7   Discussion

In [21], the objectives of HEI's communication policy were outlined. One of the objectives present in the document was "increasing the visibility of the institution", this being a too general, because it is difficult to measure its performance according to the sentiment analysis made. For this purpose, it would be necessary to consider not only the institution's Twitter, but also all other communication tools, such as events, billboards or other social networks (Facebook, Instagram, LinkedIn and YouTube). However, it can be said that the flow of tweets that mention the institution allows greater visibility of the institution, as "social networks can be an effective way to reach groups of interested parties, if organizations understand how the stakeholders use the websites" [22]. To measure the success of the goal of attracting "a higher number of students, mainly for short courses, postgraduate courses, executive training and MBAs" [21], we would have to access to the number of students enrolled in short courses, before implementing Twitter in the institution.

It is noteworthy that the institution, when preparing this work, had 589 published tweets, the first tweet dated in 2015. Assessing marketing performance is a very difficult process to implement especially in comparison with internal corporate processes, such as accounting, manufacturing, research and development. Given this marketing performance are considered to be "marketing's outputs lagged, multivocal and subject to so many influences that establishing cause-and-effect linkages" [23] that may difficult the analyses. However, assessing interactions on social media and knowing users allow the HEI to make better decisions on its marketing strategy.

Studies highlighted the deficient use made by non-profit institutions of social networks, with only 81% of organizations directing social networks to their website. Less than half of organizations (43%) provided information about their organization's mission, and less than a quarter (22%) provided an organization's history [22]. Such characteristics were not found on the HEI social networks. Thus, it stands out in comparison with other competing higher education institutions. A school of technology and management in a close town from the current HEI only joined Twitter in 2018, while the HEI has had an account in this network since 2015. Or another HEI with the same area of activity despite having a Twitter account since 2009 has only made three publications. Thus, it can be said that the HEI is more active on social networks, thus having a greater probability of reaching a young target audience that favours digital platforms to carry out its research [21].

10.8   Conclusion and Future Work

The present model achieved 68% success when compared to personal approach. The 32% margin of error can be justified by the small size of the sample and the subjectivity of the personal approach phase. However, the model presented in the

current study includes the connection between linguistics and data science, which, used together, allow to obtain a better result.

As this is a comprehensive area of action, several actions for future work will be necessary to improve the existing method. One of them will be to apply to the used lists the terms in the languages in which the HEI is spoken, namely English, Czech, Hungarian and Portuguese in the European variant, and these are the different languages found in tweets. Another would be to increase the number of tweets in the dataset and the number of analysers, to mitigate subjectivity in the evaluation. The terms should also be punctuated by level of polarity; that is, there are terms that have, within their polarity, a higher connotation than others; for example, "Perfect" has a more positive connotation than "Good". Also, since the method always counts the term occurrences, it is necessary to develop a way to classify indifferent tweets before applying the comparison to the dataset1 and dataset2. Finally, this methodology developed for real-time analysis of tweets can be applied in other institutions of higher education.

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Part III
Customer Data Management and CRM

Chapter 11
Comparative Analysis of the Percentage of Patents Requested by the Latin American Countries of Group 1 of the SIR Iber 2019 Ranking

Marisabel Luna Cardozo, Jorge Armando Mendoza Hernandez, and Darwin Solano

Abstract The production and dissemination of scientific documents from university education institutions in Andorra, Spain, Portugal, and Latin American countries based on research, innovation, and social impact measurement factors are shown in the SIR Iber reports. This paper analyzes and compares the percentage of patents requested by the Latin American countries of group 1 of the SIR Iber 2019 report, in order to contrast the results of the RICYT and the same SIR Iber 2019 report, through the databases of the WIPO PCT agreement and PATSTAT, respectively, as measures of the performance of each country in the development of patents. The countries are located in the same order: Spain, Brazil, Mexico, Portugal, Chile, Colombia, and Argentina, from highest to lowest, according to the number of patents requested in the SIR Iber 2019 and RICYT report, although the percentage figures do not coincide, despite the fact that the WIPO PCT agreement uses as a source of statistical data extracted/compiled from the PATSTAT database. Furthermore, for Spain and Brazil, an annual decrease in the number of patents requested through the WIPO PCT agreement is predicted and, simultaneously, for Mexico, Chile, and Colombia, an increase per year is expected.

M. Luna Cardozo (✉)
Universidad Nacional Experimental Politécnica Antonio José de Sucre, Av. Corpahuaico, Barquisimeto 3001, Venezuela
e-mail: mluna@unexpo.edu.ve

J. A. Mendoza Hernandez · D. Solano
Universidad de la Costa, Barranquilla, Colombia
e-mail: jemndoza8@cuc.edu.co

D. Solano
e-mail: dsolano1@cuc.edu.co

11.1 Introduction

The SIR Iber Ranking annually brings together Latin American countries by the capacity of their higher education institutions (HEI) to produce and publish scientific documents, to generate new technologies or inventions, and to disseminate them in scientific journals of recognized academic prestige [1–4]. For this purpose, it classifies universities that have at least one (1) document published in Scopus-indexed journals during the five-year period analyzed [5–7], which ends two years before the publication of the classification. For example, the SIR Iber 2019 report uses the results of the 2013–2017 five-year period [6].

To make such a classification, it considers indicators of impact, excellence, leadership, open access, international collaboration, editorial management, and innovation, in order to encourage the dissemination of new knowledge with indicators of academic quality, competitiveness, and visibility of universities [7–10]. The SIR Iber 2019 report [6] shows the results of seventeen [17] indicators distributed among three (03) measurement factors: research, innovation, and social impact, from 1,761 HEIs evaluated. It has defined four (04) groups of countries according to the number of papers published—in the Scopus database—by all their higher education institutions, during this five-year period. Group 1 includes the countries with a total production of more than 50,000 studies by HEIs in the period analyzed: Spain, Portugal, Chile, Brazil, Mexico, Argentina, and Colombia.

The measurement factor referred to innovation constitutes the 30% of the compound indicator. It is built based on the institutional capacity of generating and contributing to the development of patents, considering the number of patents granted by university (PT), the number (IK), and the percentage (TI) of publications cited in the registered documents for the patent application [6, 11]. The indicator of patent (PT) is used as an evidence of the capacity of the HEI, to appropriate the knowledge and generate new technologies and inventions. The SIR Iber 2019 report [6] uses the database of Patent Statistics (PATSTAT), produced and managed by the European Patent Bureau (EPB) as a source for the calculation of the indicators of the innovation measurement factor [12–14].

On the other hand, 50 years ago, in 1966, the Patent Cooperation Treaty (PCT) was signed with the recognition by the Executive Committee of the International Union of Paris for the Protection of Industrial Property, which was the most economic, fast, and efficient of the inventions all over the world. On 9th June, 2020, this anniversary was commemorated with a diplomatic conference held in Washington D.C. (USA) [15]. The Inter-American and Ibero-American Network of Science and Technology Indicators (RICYT in Spanish) annually records the number of patents applied for by Ibero-American countries through the WIPO PCT agreement [16].

The purpose of this research is to analyze and compare the percentage of patents granted by the Ibero-American countries of group 1 of the SIR Iber 2019 report, in order to contrast the results of the RICYT and the same SIR Iber 2019 report, through the databases of the WIPO PCT agreement and PATSTAT, respectively, as measures of the performance of each country in the development of patents.

11.2 Patents Granted by the Countries of Group 1 of the Iberian CRS 2019 Report Through the WIPO PCT Convention

The Patent Cooperation Treaty (PCT) offers technical assistance and international protection to patent applicants for their inventions in many countries simultaneously, by filing the "international" patent application with a national patent office of the contracting State of nationality or domicile of the applicant, or if preferred, with the International Bureau of WIPO in Geneva. The PCT also assists the offices in decisions on the granting of patents [17, 18]. If the applicant is a national or resident of a Contracting State that is part of the European Patent Convention, the application can also be filed with the European Patent Office (EPO) [18].

WIPO's worldwide statistical database on Intellectual Property (IP) is available online. The source of this is data collected from national and regional IP offices, data generated from international filing and registration systems managed by WIPO and, thirdly, data extracted/compiled from the PATSTAT database [19].

Table 11.1 and Fig. 11.1 show the number of patents applied for through the WIPO PCT Convention, according to the applicant's country of residence, in the five-year period 2013–2017 [16]. In the five years considered, the seven (07) countries are located in the same order: Spain, Brazil, Mexico, Portugal, Chile, Colombia, and Argentina, from highest to lowest, depending on the number of patents applied for. Practically, every year it represents around 20%, the number of patents requested has remained constant: 21.36% in 2013, 20.40% in 2014, and in the last three (03) years: 19%, 19.30%, and 19.95%, respectively, 2015, 2016, and 2017. Spain's gap with the rest of the countries stands out: It concentrates 8,349 patents applied for, in other words 55.36%, followed by Brazil with almost thirty-five (35) percentage points less, with 3,133 patents applied for (20.77%); then, with twelve (12) percentage points less, Mexico with 1,331 (8.83%) patents applied for; Portugal and Chile, in positions four and five, with very similar values 833 (5.54%) and 747 (4.95%), respectively. And,

Table 11.1 Number of patents applied for by country and by year through the WIPO PCT Convention 2013–2017 [16]

Country	2013	2014	2015	2016	2017	Total	%
Spain	1851	1771	1585	1579	1563	8349	55.36
Brazil	710	665	567	604	587	3133	20.77
Mexico	229	246	288	262	306	1331	8.83
Portugal	154	156	152	160	213	835	5.54
Chile	134	116	158	166	173	747	4.95
Colombia	74	76	79	89	115	433	2.87
Argentina	69	47	36	50	51	253	1.68
Total	3221	3077	2865	2910	3008	15.081	
	21.36	20.40	19.00	19.30	19.95		100
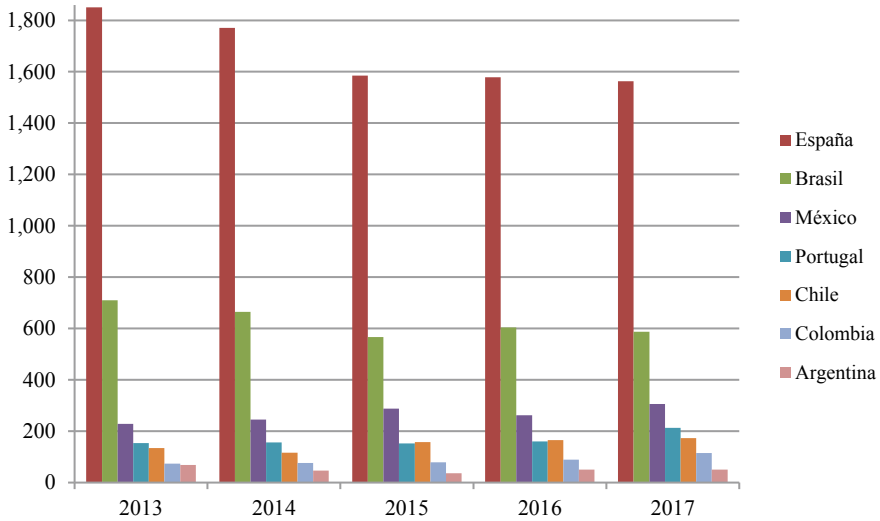
Fig. 11.1 Number of patents applied for by country and by year through the WIPO PCT convention 2013–2017 [16]

in the last positions, Colombia and Argentina are with 433 (2.87%) and 253(1.68%) patents applied for in the five-year period 2013–2017.

11.3 Patents Applied for by the Countries of Group 1 of the SIR Iber 2019 Report

Fig. 11.2 shows the percentage of participation by country in the total number of patents applied for by the Ibero-American HEIs in group 1 of the SIR Iber 2019 [6]. This group accumulates 96% of the total number of patents applied for—the remaining 4% is concentrated in Peru, Cuba, Costa Rica, Puerto Rico, Jamaica, Uruguay, and Ecuador. The seven (07) countries are in the same order: Spain, Brazil, Mexico, Portugal, Chile, Colombia, and Argentina, from highest to lowest, depending on the number of patents applied for, as they are located in RICYT [8]. Spain stands out in the first place with 37%, then Brazil with 28%, Mexico accumulates 14%, Portugal and Chile share the fourth place with 6%—which contradicts that Portugal descends to the fifth position in patent applications according to the SIR Iber 2019 report [6]—and, in the fifth and sixth place, Colombia and Argentina, with 3% and 2%, respectively.

In order to have a comparative base of the percentage of patents applied for by the countries analyzed through the WIPO PCT agreement 2013–2017 and the percentage of patents applied for by the countries of group 1 of the SIR Iber 2019 report, Table 11.2 shows the participation percentage when considering 100% of patents applied
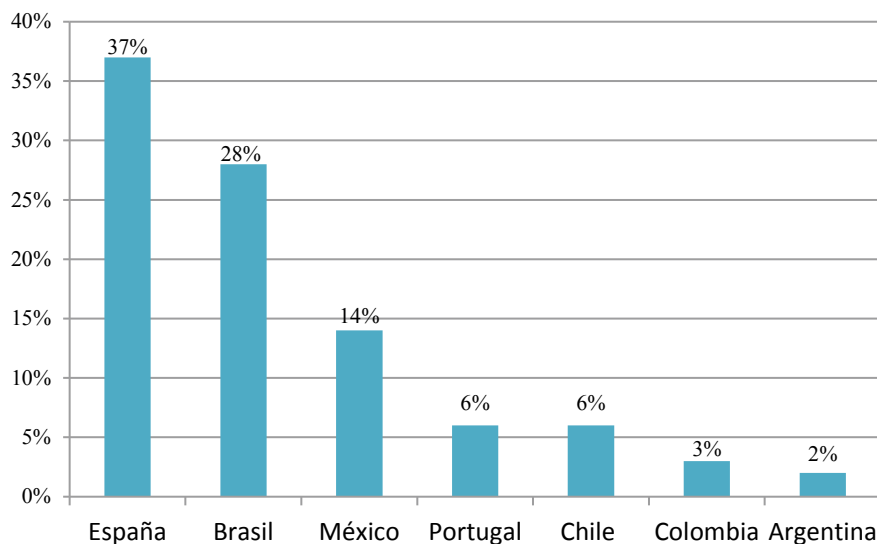
Fig. 11.2 Percentage of participation by country in the total number of patents applied for by Ibero-American HEIs in group 1 of the SIR Iber 2019 report [6]

Table 11.2 Percentage of participation by country in the total number of patents applied for by Ibero-American HEIs in group 1 of the SIR Iber 2019, considering 96% and 100% of the total [6]

Country	In relation to 96%	In relation to 100%
Spain	37	38.54
Brazil	28	29.17
Mexico	14	14.58
Portugal	6	6.25
Chile	6	6.25
Colombia	3	3.13
Argentina	2	2.08
	96	100

for in this group of countries [6]. When comparing the results of the percentage of patents applied for as given in Table 11.1 [16] and Table 11.2 [6], it is evident that they do not coincide, despite the fact that the WIPO PCT convention uses, as a source of statistical information, extracted/compiled data from the PATSTAT database.

11.4 Forecast of Patents Applied for by Group 1 Countries of the SIR Iber 2019 Report Through the WIPO PCT Agreement

Fig. 11.3 shows the trend lines of the number of patents applied for through the WIPO PCT Convention according to the applicant's country of residence, starting from the five-year period 2013–2017 [16, 20, 21]. Spain and Brazil have a negative pending, that is, an expected decrease of 76.8 and 30.7 patents applied for per year, respectively, with a determination coefficient of 84.36% and 67.03%. Mexico with a positive slope that translates into an estimated increase of seven patents applied for per year, with a determination coefficient of 74.70%. Chile is expected to increase by 12.8 patents applied for annually with an r^2 of 72.52%, and Colombia would also increase by 9.5 patents applied for annually with a completion coefficient of 79.08%. Portugal and Argentina for having a determination coefficient of 55.40% and 19.27%, respectively, are not concluded with respect to the linear regression analysis. In relation to the countries of Spain, Brazil, Mexico, Chile, and Colombia, more than 67% of the total variation of the number of patents applied for is explained by the annual variation [20, 21] (Table 11.3).

11.5 Conclusions

The SIR Iber 2019 report has classified the Latin American countries in four (04) groups according to the number of papers published—in the Scopus database—by all the HEIs, in the five-year period 2013–2017. The first one stands out, where it gathers the countries with a total production of more than 50,000 papers of the HEIs in the period analyzed: Spain, Portugal, Chile, Brazil, Mexico, Argentina, and Colombia. A measurement factor for such classification is innovation, which considers, among other indicators, the institutional capacity to generate or contribute to the development of patents, by considering the number of patents applied for by universities (PT) using the PATSTAT database as a source. Simultaneously, RICYT also shows the result of that indicator using the WIPO PCT agreement as a database.

In this paper, the percentage of patents applied for by the Ibero-American countries of group 1 of the SIR Iber 2019 report has been analyzed and compared, in order to contrast the results of the RICYT and the same SIR Iber 2019 report, through the databases of the WIPO PCT agreement and PATSTAT, respectively, as measures of the performance of each country in the development of patents.

As a result, it should be noted that in both the SIR Iber 2019 report and the RICYT, the seven (07) countries are placed in the same order: Spain, Brazil, Mexico, Portugal, Chile, Colombia, and Argentina, from highest to lowest, depending on the number of patents applied for, although the percentage figures do not coincide, despite the fact that the WIPO PCT agreement uses as a source of statistical data extracted/compiled from the PATSTAT database.
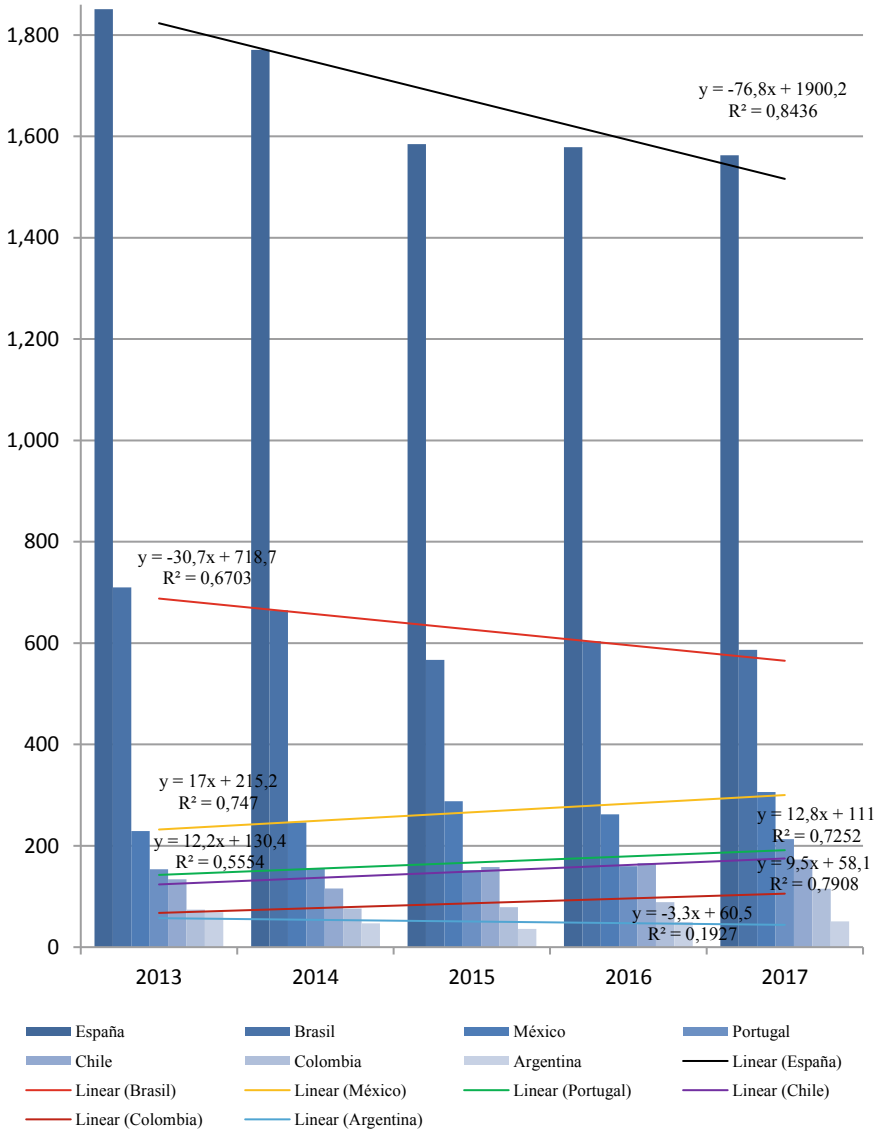
Fig. 11.3 Forecast of the number of patents applied for by country through the WIPO PCT Convention 2013–2017 [16, 20, 21]

Additionally, an annual decrease in the number of patents applied for through the WIPO PCT agreement is predicted for Spain and Brazil and, simultaneously, an increase per year for Mexico, Chile, and Colombia.

Table 11.3 Characteristics of the trend line of the number of patents applied for by country through the WIPO PCT Convention 2013–2017 [16]

Country	Pending	r^2
Spain	-76.8	0.8436
Brazil	-30.7	0.6703
Mexico	17	0.7470
Portugal	12.2	0.5540
Chile	12.8	0.7252
Colombia	9.5	0.7908
Argentina	-3.3	0.1927

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Part IV
Data Mining and Big Data—Marketing Data Science

Chapter 12
Fuzzy Analytics Application in Digital and Consumer Marketing: A Literature Review

Adeolu Dairo and Krisztián Szűcs

Abstract There has been an increasing emphasis on fuzzy analytics (FA), which is the application of fuzzy sets, fuzzy logic, and all associated fuzzy methods in the field of marketing in recent years. However, while it has been applied in several studies in marketing, the concept remains poorly harnessed, which obstructs its theoretical and practical development in marketing science. This review aims to address a gap in the literature through a robust categorization of the use and application of FA in marketing science. By drawing on a review of the literature, this paper explores FA within the marketing field. This study presents a clear and definitional framework with distinctive characteristics of useful methods of FA in the marketing field. A final portfolio of 376 scholarly articles is categorized along with five identified application areas in marketing science: (1) fuzzy modeling, (2) Web analytics, (3) performance analysis, (4) fuzzy clustering and segmentation, and (5) fuzzy market analysis. This exploration provides deeper insights along with the cross-cutting FA approach and applications in digital and consumer marketing which generates a forward-looking future research challenges and opportunities in theory and practice.

12.1 Introduction

Despite the theoretical advancement over the years, empirical evidence does not exist to show that consumer marketers have fully optimized revenue and generate optimal incremental revenue from the customer base across all customer touch points [1, 2]. Consequently, marketing analytics is one of the research areas with so many theoretical advancements but with limited marketing practice to leverage analytics for optimization of business revenue [3]. Therefore, the emergence of fuzzy analytics (FA)

A. Dairo (✉) · K. Szűcs
Faculty of Business and Economics, University of Pecs, Rakoczi 80, Pecs 7623, Hungary
e-mail: dairo.adeolu@pte.hu

K. Szűcs
e-mail: szucsk@ktk.pte.hu

to the application of issues and problems in digital and consumer marketing represents an important step toward addressing some analytics gaps in marketing science [2]. Fuzzy analytics (FA), which consists of the application of fuzzy sets, fuzzy logic, and other fuzzy methods to issues and problems, have been widely applied to a range of marketing tasks. However, research that systematically explores these applications with a view of identifying the gaps in fuzzy application toward marketing issues is lacking. This paper tends to examine the use of fuzzy analytics (FA) in marketing with specifics in digital and consumer marketing. The main intellectual applications, theories, and research clusters in FA application in marketing, along with the evolution of FA in the marketing application landscape, are explored. Also, the current evolving topics and promising areas for future contributions are discussed with a view of shedding light on the potential problems from this disconnect. In achieving these objectives, a systematic analysis is conducted on a large number of articles that are indexed in Web of Science and Scopus, where FA has been applied to the field of marketing.

12.2   Theoretical Background

The evolution of digital marketing and social Web opportunities has created a situation where consumer marketers are daily searching for new ways to leverage the digital marketing explosion [4, 5]. However, there are associated complexities in customer relationship management with which marketers need to cope. Zadeh Lofti's work [6] on the fuzzy sets first established the concept of fuzzy logic or fuzzy thinking [6]. In his paper, Zadeh suggests that binary thought is a way of simplifying a complex world and is, in most cases, not adequate. According to Zadeh [6], as the complexity of the system increases, it becomes more difficult for us to make more accurate statements about the system until a time when it becomes challenging, and accuracy becomes impossible [7].

Fuzzy logic can be described as the extension of classical logic with only two truth values, 'true' and 'false.' In fuzzy logic, value is not limited to only two alternatives but a variety of truth values for logical propositions. It can, however, be viewed as an infinite value logic covering the entire interval from true (1) to false (0). In natural languages, fuzzy logic focuses on linguistic variables and a basis for the approximate reasoning with imprecise propositions [8]. The mathematical fundamentals of fuzzy logic include basic concepts, such as fuzzy sets, membership functions, and basic fuzzy operations (intersection, union, and complement). Significant academic papers using fuzzy logic in theoretical fields of traditional mathematics exist. These papers include areas such as differential equations, probability theory statistics, measure, and integral theory with a strong link between mathematics and fuzzy logic [8]. This mathematical theory captures the ambiguity that characterized human actions, communications, and natural languages. Fuzzy theory eases the interactions of humans with machines [9]. Marketers determine the linguistic terms and the appropriate membership and express them as triangular fuzzy numbers (TFNs)

using a fuzzy set theory [8]. The membership function of a fuzzy number Ã is represented as:

$$f_A(x) = \begin{cases} \frac{x-b}{b-a}, a \leq x \leq b, a \neq b \\ \frac{x-c}{b-c}, b \leq x \leq c, b \neq c \\ \quad 0, \text{otherwise} \end{cases}$$

where $\tilde{A}$ is referred to as TFN and denoted as $\tilde{A} = (a, b, c)$, and the comparison between TFNs is very critical in decision making because of its flexible nature and openness [10].

FA application in marketing has allowed consumer marketers to generate analytical insight that will lead to marketing opportunities, which can optimize marketing activities [11]. These fuzzy marketing methods are attractive for the customer base and relationship management, and their usage will be discussed in this study. Several studies have applied the fuzzy theory to marketing problems. From this point of view, this study reviews relevant articles that have taken advantage of using FA within the marketing field. In line with the objective of this study, a critical examination of FA as a useful and effective analytical method in marketing is demonstrated through a robust systematic review.

12.3 Methodology

12.3.1 Systematic Review—ProKnow-C

This study follows the most common, which is the theoretical background review of the literature. The review methodology in this study supports the knowledge development process-constructivist (ProKnow-C), a method that follows steps that is similar to a protocol [8, 12]. The selection criteria for the formation of the articles in the review portfolio are strictly on the relevance of the materials. This draws on how fuzzy methods and all its associated theoretical components have been applied in the field of digital and consumer marketing. This study focusses on Scopus and Web of Science databases. The motivation for Scopus and Web of Science arises from the acknowledgment of these sources within the academic community as two significant repositories of academic collections [13]. The Boolean combination of keywords around the topic is grouped on two main axes across many combinations, namely "fuzzy theory" and "marketing," "fuzzy sets" and "marketing," "fuzzy logic" and "marketing," and "digital marketing" and "fuzzy logic."

In arriving at a final portfolio, a search of both databases is performed, and all other documents were excluded except academic journals, conference papers, and proceedings. A total of 8438 records were obtained (3642 from Scopus and 4796 from Web of Science). After a duplicate check, a total of 2435 articles appear in both databases

Fig. 12.1 Flow diagram of the study selection process

resulting in the initial bibliographic portfolio of 6003 records. Manual filtration by title relevance is followed by abstract and then full-text relevance filtration. These steps reduced the portfolio records to 656 records, as shown in Fig. 12.1.

These records are subjected to Google Scholars, and all articles that are not cited in Google Scholars are removed. This is because having no citation in the Google Scholars, they may not be considered as academic relevance [14, 15]. This approach reduces the number of articles to 410. All the references of the 410 articles were examined to see which one is relevant to the topic that is not included in the 410. Additional 65 eligible papers were obtained, and the final portfolio increased to 475 articles.

12.4 Results

12.4.1 Analysis of the Final Portfolio

In the final portfolio, Table 12.1 shows the highest number of publications in the last three years between 2017 and 2019. Researchers have tremendously grown the rate at which they leverage the use of fuzzy analytics (FA) in the marketing field in recent years. The final portfolio of 376 articles that were published between 2009 and 2019 are included in the final categorization and review.

The key top academic journals in the portfolio are Expert Systems with Applications (90 records), Fuzzy Sets and Systems (30 records), Decision Support Systems (29 records), and Applied Soft Computing (25 records). These are followed by Journal of Computer and Industrial Engineering (20 records), Knowledge-Based Systems (20 records), Journal of Soft Computing (15 records), International Journal of Soft Fuzzy System Applications (6 records), IEEE Transactions on Fuzzy Systems (10 records), and Journal of Intelligent and Fuzzy Systems (6 records). Identifying the top articles by citations they received from publications within the portfolio, the top-ranked journals are Expert Systems with Applications (1201 citations), Applied Soft

Table 12.1 Overview of reviewed articles by year of publication

Year	1999	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Amount	20	24	18	37	24	24	34	39	54	52	50

Computing (1025 citations), and Fuzzy Sets and Systems (979 citations). This analysis reveals that leading Expert Systems, Knowledge-based, and Soft Computing-related journals, mainly, are heavily cited by publications in the application of fuzzy methods and analytics in the field of marketing. This indicates the importance of these publication outlets as contributors to the intellectual base of fuzzy marketing.

12.4.2   Analysis of Key Publications

This paper conducts a content analysis of key articles in the final portfolio to identify different research approaches and contributions of each of the publications. Following a thorough exploration of the use and application of fuzzy sets, fuzzy logic, and all associated fuzzy theories on all aspects of marketing within the article portfolio, a categorization of articles by topic is proposed. First, the articles are categorized into five categories following their application of FA in the marketing field. These categorizations are fuzzy modeling, Web analytics, clustering and segmentation, performance analysis, and fuzzy market analysis. The classification of the article topics into these five categories is given in Table 12.2.

Fuzzy modeling accounts for 42% of the total portfolio. This includes the use of FA in social networks, expert marketing systems, recommendation systems, and optimization through Multi-Criteria Decision Making (MCDM). Also, Web analytics (WA) and online marketing have seen a lot of fuzzy application usage in recent years. The use of fuzzy analytics (FA) in data mining and clustering within the marketing field aligns with the growing consumer data and the big data evolution.

Table 12.2 Categorization and classification of the main topic into streams of fuzzy application (FA) in marketing

Categorization	Article classification	Categorization (%)
Fuzzy modeling	1. Fuzzy Application in Social Networks 2. Fuzzy Application in Expert Systems 3. Fuzzy Application in Recommendation Engine 4. Fuzzy Optimization and Multi Criteria Decision Making (MCDM)	42
Web analytics	1. Fuzzy Application in Web Analytics 2. Fuzzy Application in Online Marketing	17
Performance analysis	1. Fuzzy Application in Performance Measurement 2. Fuzzy Application in Marketing Programs	2
Fuzzy clustering	1. Fuzzy Application in Customer Data Mining 2. Fuzzy Segmentation and Clustering	35
Fuzzy market analysis	1. Fuzzy application in Scoring Methods 2. Fuzzy Application in Portfolio 3. Marketing Techniques	4

However, research focus has been limited to the use of FA in marketing campaigns, measurement, scoring, and portfolio marketing. Digital marketing problems are fuzzy Multi-Criteria Decision Making (MCDM) problems [16]. This is because issues associated with digital marketing include qualitative criteria that can be evaluated by using linguistic terms and some quantitative imprecise and vague data [16, 17]. Table 12.3 shows a snapshot of various fuzzy methods that have recently been applied to diverse digital marketing problems.

Table 12.3 Fuzzy analytics (FA) application in digital marketing

Authors	Applications	Methods	Years
Liu and Chen [18]	Website prioritization and recruitment	Fuzzy AHP	2009
Lee and Ahn [19]	Consumer e-commerce Web system	Fuzzy cognitive map	2009
Ramkumar et al. [20]	Product scoring	Fuzzy logic	2010
Ajayi et al. [21]	Improvement of response time	Fuzzy logic-based information retrieval model	2010
Mohanty and Passi [22]	Firm's reaction to customers' feedbacks	Fuzzy linear programming	2010
Zumstein [23]	Web metrics analysis	Fuzzy logic	2010
Yu et al. [24]	Ranking of consumer e-commerce Web sites in e-alliance	AHP and fuzzy TOPSIS	2011
Kabir and Hasin [25]	Mobile e-commerce success identification factor	Fuzzy AHP	2011
Zandi and Tavana [26]	E-CRM framework development	Fuzzy QFD	2011
Kolomvatsos et al. [27]	Electronic marketplace	Fuzzy logic	2012
Şengül and Eren [28]	E-market place	Fuzzy AHP -TOPSIS	2015
Kaltenrieder et al. [29]	Digital marketing management improvement	Fuzzy ANP	2015
Naili et al. [30]	E-commerce	Fuzzy MCDM	2015
Chiang [31]	Digital marketing customer value	Fuzzy MCDM	2017
Murugananthan and Gandhi [32]	Social media analytics	Fuzzy MCDM	2020

12.5   Discussion

The usage and application of fuzzy analytics (FA) in marketing is old but evolved substantially over the last few years. While the usage of a cutting-edge methodology such as fuzzy methods is multifaceted and dynamic, the evolving topics in marketing that have benefited from these methods can never be exhaustive. This paper, therefore, contributes to the knowledge and understanding of the application of FA in the marketing field along with its crucial research focus and its historical developments. Firstly, the application of FA in the social network, expert marketing systems, recommendation systems, and fuzzy optimization through MCDM in marketing dominates the use of the fuzzy application in marketing science. Also, Expert Systems with Applications, Fuzzy Sets and Systems, and Decision Support Systems are the top journals that dominate the use of FA application in marketing. Fuzzy sets, fuzzy logic, and all associated fuzzy theories have been leveraged across the fuzzy modeling cluster of the marketing application. Other research areas apart from the fuzzy modeling clusters that have enjoyed the use of FA in marketing are clustering, segmentation, and data mining application research clusters. These clusters have experienced the interest of researchers and benefited richly in the application of FA. In the digital marketing space, FA has been widely applied around Web analytics (WA). Generally, the use of FA in marketing science started to evolve from 2003. Since 2009, researchers' interest in the application of FA to marketing problems has grown significantly. This trend witnessed a massive jump in the last three years. The growth which is expected to continue as new marketing channels and platforms continue to emerge because of the digital evolution and the platform networks within the digital space.

12.6   Conclusion

This article explores the use of fuzzy analytics (FA) in marketing science, along with its growing research focus within the fuzzy application community. Topics in these areas are consolidated and reviewed to identify critical open questions and possible opportunities for future research. The review of the existing literature in the final portfolio of this study reveals that FA has already been applied to a wide range of areas within the marketing field. However, when compared with the use of fuzzy logic and theory in other fields such as engineering and control systems, its potential in marketing science is still far from being reached [20]. One of the main conclusions of this study is that FA has demonstrated a useful property in addressing uncertainty and vagueness that is associated with customer behavior in the field of marketing. From this insight, coupled with the rate at which digital channel is evolving, this paper projects an increase that is going to be significant in the publication of FA application to the field of digital marketing in the coming years.

Many research applications in marketing have emerged using FA as the modeling techniques. The application around fuzzy modeling, which consists of expert marketing systems and recommender systems, will continue to grow along with artificial intelligence (AI) techniques [28]. This growth will move along the digital evolution across many customer touch points. Another prominent field of marketing, as revealed in this study, is customer behavior and customer satisfaction models. FA offers opportunities in evaluating relations between consumer needs and service attributes. Also, the ability to navigate through the natural language and its statements components has yielded contributions from researchers in the areas of product and service with a quality evaluation and group analysis. Marketers have a powerful tool in FA, which can be leveraged in the development of marketing models. FA model is a new way of carrying out marketing analysis by marketers, which has emerged because of the usage of "if-then rules" instead of the crisp value. With this new modeling approach, marketers are now endowed with business tools that are sustainable for driving business performance. Marketers promptly can respond to the dynamic and sophisticated consumer market, along with competition and other market fluctuations. Also, customer profiling, clustering, and segmentation are other marketing fields that have witnessed the significant application of FA application. The marketing mix, pricing, and strategy are another prominent area of fuzzy applications in marketing science according to the findings of this paper. In all these applications, marketers have seen an increase in the gathering of marketing analysis because of the use of FA in several aspects of marketing science.

Finally, this study provides relevant implications for both practitioners and academics. From the academic point of view, linking and identifying the aspects and fields in which FA has been applied to marketing science reveals the opportunities that are embedded in fuzzy theory and methods. Also, the exploration of several studies where FA has been used in the marketing field identifies research gaps along with successful results, including the space of digital marketing. For marketing managers, all aspects of marketing where the fuzzy application can help in the effective management and driving of business performance have been explored. This study contributes to the linkage and integration of fuzzy logic, fuzzy sets, and all fuzzy methods into a robust analysis of several aspects of marketing through a comprehensive and systematic review categorization and classification of critical areas of development.

12.6.1 Limitations and Future Research Direction

One limitation that is widely shared by literature reviewers is that many articles would have been involuntarily omitted during the preparation of the final portfolio. While it may not be exhaustive, this paper draws conclusions from a comprehensive and extensive list of published articles. Thus, it opens the door for potential overlaps between areas in which FA has been applied in the field of marketing science.

For future works, only a little discussion exists in which researchers have used FA in the context of driving marketing and business performance. This opens research opportunities in the digital marketing space for the application of FA across digital channels. There is a considerable research opportunity in applying FA to current problems and realities that are daily confronting consumer businesses and marketers in this digital age.

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Chapter 13
Value Proposition Analysis of Network Business During Digital Adaptation in COVID-19 Conditions

Elizaveta Fainshtein

Abstract This paper explores how digital technology has forced network enterprises to reconsider and develop value proposition, evaluating how digital queries of potential consumers influence it during the period of business restrictions caused by the COVID-19. This is theoretical and empirical research in equal measure. Study was conducted on 1000 keyword semantic analysis using Google Keyword Planner analytic big data on customer queries for restaurant delivery services in St. Petersburg (Russia) to analyze key preferences that should be included in the value proposition. Data were divided into five major categories: delivery time, promotions, food processing, menu, and aggregators' delivery companies. MANOVA analysis showed all five were significant while ANOVA—significance for menu and aggregators' delivery companies. Findings indicate that value proposition competitive advantage is driven by big data analysis and customer needs operative reaction under COVID-19 conditions. Value proposition components generated from big data analysis have a positive business performance impact.

13.1 Introduction

The outbreak of the coronavirus disease 2019 (COVID-19) has been recognized as one of the most urgent public health emergency issues of international concern [1, 2]. Society changed in a matter of days, as did the needs of people. To continue entrepreneurship activities in pandemic conditions, it is necessary to form a business model strategy to provide optimal customer service and maintain sales. From the point of view of digital technologies, innovations such as the transfer of core business to the use of e-commerce and big data analytics are important areas of study in the COVID-19 environment. E-commerce may offer an additional information channel for communication with customers, but it can also be developed as an independent service, which is actively used in aggregator companies. Similarly, a big data review

E. Fainshtein (✉)
National Research University Higher School of Economics, 16, ul. Soyuza Pechatnikov, St. Petersburg 190121, Russian Federation
e-mail: e.feinshtein@gmail.com

can affect a company's brand performance in relation not only to marketing, but also to business processes. This paper analyzes how network business has adapted to consumer needs and transferred part of the business processes to an online format during the epidemic.

Currently, attention to adaptive innovations in business modeling is growing both in entrepreneurial practice and in research [3, 4]. In this article, the concept of forming a value proposition is defined as a strategic tool for creating value for both consumers and network enterprises. In other words, this refers to how network firms operate at the strategic and operational levels to bring products to the market during the COVID-19 crisis. Now companies are undergoing global restructuring, and firms use technology platforms and digital promotion technologies for this [5, 6]. The transition to the use of e-commerce tools to market products is determined by changes in company management strategy, which is new to most companies and has led to noticeable changes in marketing interactions with customers and partners. The study focuses on how restaurant chain companies can analyze a value proposition as a result of a digital transformation, especially with regard to the methods of online trading formats taking into account big data analytical tools, while tracking the preferences of potential customers.

The study is organized as follows: the introduction shows the relevance of the topic and formulates the purpose of the research. Section 13.2 provides an overview of theoretical and empirical work with a selection of factors related to the identification of strategic problems of business modeling. Section 13.3 discusses the research methodology, data collection process, and the development of measurements, followed by the research results. In Sect. 13.4 conclusions, limitations and practical recommendations for further research are presented.

13.2   Review of the Literature: Conceptual Framework

In this research, an innovative value proposition is defined as a set of key factors that are priority for consumers and which must be implemented in the business model to create a competitive advantage. According to the results of theoretical analysis, it is possible to conduct a study of the main research directions on companies' business models using digital technologies as a key tool for carrying out entrepreneurial activity. There are three main areas:

1. The use of the internet, mobile communications, and information technology as the main tools for interacting with consumers to promote goods in an online format [7, 8].
2. The solving solutions of interaction systemic issues between company divisions related to the effectiveness of the company's internal work and the creation of value through prompt and high-quality service of business processes [9–11].
3. The management of innovations and technologies for the analysis and forecasting of a company's strategic actions [12, 13].

The formation of a value proposition concerns not only the issues of optimizing internal processes and introducing new technologies in organizations. Its innovations should influence the core business logic of the company and be visible to the users of the products. Existing quantitative research in the field of strategic and innovative management [14], business modeling [15, 16], and innovative digital technologies [17] shows that the key blocks of business modeling are the formation of a value proposition, interaction with suppliers and partners, and an analysis of potential risks.

For companies, the use of digital technologies and e-commerce, open-access sites, and platforms, in terms of COVID-19 provides the opportunity to create a unique value proposition that guarantees the stability of operations and the ability to not interrupt business activities during the quarantine, in contrast to the necessary suspension of work in commercial premises. For online orders, there is no need to establish direct contact with the consumer and no link to the opening hours of the institution. Online sales allow transactions in the B2C market between people on the e-commerce platform. Nevertheless, this area of restructuring the value proposition during the pandemic is an open question in the research on the topic of their use as a management tool in building a business model of a company, in particular, creating a value proposition of a company [4, 18].

The widespread use of digital technologies has led to the analysis of consumer queries, which can be analyzed in the study and used to create up-to-date information on the features of the digital transformation while doing business in COVID-19. Based on the reasoning discussed in the preceding paragraphs, the research is based on the following hypotheses:

H1. Qualitative product characteristics can increase online delivery order demand through digital resources.

H2. Qualitative service characteristics can increase online delivery order demand through digital resources.

H3. The possibility of ordering through aggregator companies (service transfer for the execution of outsourcing order delivery) can increase the demand for online delivery orders through digital resources.

H4. The top of the search page price (average value, RUB) increases which affect online delivery order demand through digital resources.

13.3   Methodology

The methodology of this study is based on the semantic core analysis, classification of the data obtained, providing a case study of the restaurant industry under COVID-19 conditions (by studying the online format of order queries and the demand for delivery service), collecting statistical data, and performing multivariate analysis of variance (MANOVA) and analysis of variance (ANOVA) tests. This study was carried out through the Google Keyword Planner program that allows conducting semantic analysis and collecting data by keywords statistics.

13.3.1   Data Description

After collecting the keywords, they were classified and highlighted in the main criteria of what users most often look for when shopping online for restaurant products. Data has been collected since the official recognition of the virus by the World Health Organization (WHO). The coronavirus was discovered and recognized by WHO in December 2019 and received its name as COVID-19 [19]. In connection with this information, the data for the study were taken for the period December 2019–April 2020.

The target sample of the study included 1000 keyword search results among popular queries using the statistics of the Google Keyword Planner analytical database (Table 13.1), which made it possible to analyze the relationship between the value offers of restaurant chains in St. Petersburg and key consumer queries, and classify the criteria. During the study, the keywords of the semantic core and the optimization options based on the synonyms "restaurant delivery," "takeaway restaurant delivery," and "chain restaurants with delivery" were formed. The Google search engine finds similar combinations of phrases by keywords, as well as optimized options—similar keywords in a related topic to popular queries about the selected industry.

The study collected statistical data for keywords by Google Keyword Planner system. St. Petersburg city (Russia) was chosen as the target location, which, according to official Google data from the Google Keyword Planner planning tool, has 6.5 Mio. registered users. The analysis was based on the keywords search in Russian.

The competition indicator (high, medium, and low) provided by Google Keyword Planner shows the ratio of the companies number that use the set of keywords to the total number of keywords in the Google search engine system (Table 13.1). Thus, for companies operating restaurant chains, it becomes possible to evaluate how competitive the keyword advertisement placement is, with certain settings of geo-targeting and targeting in the search network, and, consequently, the feasibility of including one or another criterion in the offer of products.

The average number of queries for a particular keyword and variants close to it (for given search network settings and in the selected date range) provided by Google Keyword Planner was used to evaluate the effectiveness of keywords during the period of the study.

After processing the data, the keywords were divided into five main criteria of the most popular queries, which can affect the attractiveness of the value proposition (Table 13.2). From the criteria, delivery time (speed, time) and loyalty programs (promotions, bonuses, and discounts) relate to the quality characteristics of the service (hypothesis H2). The quality of the heat treatment of dishes (warm, hot food) and the delivery menu (list of dishes) relates to the qualitative characteristics of the products themselves (hypothesis H1). The ability to order through aggregators (yandex.eda, delivery club, foodtaxi) refers to the hypothesis H3.

Table 13.1 Statistical data, by keywords, based on the Google Keyword Planner analytical database, 01.12.2019–30.04.2020

The average number of queries, thousand units	Keyword competition level, units			$\sum$
	High	Medium	Low	
10–100	120	313	499	932
100–1000	4	16	39	59
1000–10,000	2	2	3	7
10,000–100,000	0	0	2	2
$\sum$	126	331	543	1000

Table 13.2 Classification of key queries about restaurants in St. Petersburg, 01.12.2019–30.04.2020

No.	Period, date		Number of delivery queries, thousands of units					$\sum$
	Beginning	End	Time[a]	Processing[b]	Menu[c]	Promotions[d]	Aggregators[e]	
1	01.12.19	31.12.19	46	49	43	48	35	221
2	01.01.20	31.01.20	34	32	38	18	23	145
3	01.02.20	29.02.20	33	35	20	25	31	144
4	01.03.20	31.03.20	58	27	23	31	33	172
5	01.04.20	30.04.20	94	54	41	72	57	318
			265	197	165	194	179	1000

Note The five categories data of delivery queries number:
[a]Delivery time (speed, time), number of queries about delivery, thousands of units;
[b]The quality of the heat treatment of dishes (warm, hot food), number of queries about delivery, thousands of units;
[c]The delivery menu, number of queries about delivery, thousands of units;
[d]Loyalty program (promotions, bonuses, discounts), number of queries about delivery, thousands of units;
[e]The ability to order through aggregators (yandex.eda, delivery club, foodtaxi), number of queries about delivery, thousands of units

13.3.2 Data Analysis Results

The five categories data were analyzed using the SPSS 22.0 software package to check the impact of the competition index, rates for showing at the top of the search page (average, RUB) on the level of competition (high, medium, and low). This is necessary to evaluate each category (time, processing, menu, promotions, and aggregators) and the interconnection and influence on the value proposition of the restaurant business, so that companies can include the missing criteria in their business model and improve products, and reduce costs by slightly influencing the product criteria of a potential purchase. For the study, MANOVA is used (Table 13.3), which considers several dependent variables at the same time. MANOVA is used to detect the main effects and the interaction of the categorical variables effects against a

plurality of interval-dependent variables. Unlike ANOVA, this type of analysis can simultaneously analyze more than one dependent variable.

The competition index indicator is used to evaluate how competitively the placement of advertisements by keyword with certain settings of geo-targeting and targeting in the search network is among five established significant criteria for the restaurant delivery function using e-commerce. The competition indicator provided by Google Keyword Planner has values from 0 to 100 and is defined as the ratio of the advertisement slots number in which advertisements were displayed to the total number of available advertisements slots.

The top of the page search impression price (average, RUB) for a keyword provided by Google Keyword Planner shows the average cost of an advertisement appearing at the top of a search page by advertisers with a similar location and search network settings.

The MANOVA analysis (Table 13.3) shows that in the case for time, processing, menu, and the possibility of ordering through aggregators, the competition index and the price for showing at the top of the search page influenced the level of competition. Thus, time ($F = 2.649$, $p < 0.05$) and promotion ($F = 1.512$, $p < 0.05$) categories affect the value proposition within their group and confirm the H2 hypothesis. However, it is worth noting that the promotions category is not an independent significant variable. Processing ($F = 3.411$, $p < 0.05$) and menu ($F = 3.281$, $p < 0.05$) affect the value proposition and confirm hypothesis H1. The possibility of ordering through aggregators ($F = 6.428$, $p < 0.05$) confirms the H3 hypothesis, since it also has an impact on the value proposition within its group. This confirms the hypotheses H1–H3.

In the ANOVA analysis of variance (Table 13.4), the independent variables are analyzed relative to the price for showing at the top of the search page and the level of competition. As given in Table 13.4, there are significant differences between the cost of an advertisement space and between different levels of competition.

The ANOVA analysis showed that from the point of view of the influence of the price for showing at the top of the search page on the level of competition, menu (F

Table 13.3 MANOVA analysis: checking the impact of the competition index and the price for showing at the top of the search page on the competition level of the query keywords

Multidimensional results				
Category	df	Wilks's λ	F	Sig.
Time	265	0.961	2.649*	0,033
Processing	197	0.933	3.411*	0.009
Menu	165	0.923	3.281*	0.012
Promotions	194	0.969	1.512*	0.198
Aggregators	179	0.868	6.428*	0.001

* $p < 0.05$

Note the following values are used in the analysis: df—number of degrees of freedom; Wilks's λ—Wilks lambda; F is the value of the F-criterion; Sig.—significance

Table 13.4 One-dimensional ANOVA results: checking the influence of the price for showing at the top of the search page on the level of competition of query keywords

One-dimensional results			
Category	df	F	Sig.
Time	265	1.257*	0.259
Processing	197	1.300*	0.329
Menu	165	6.299*	0.002
Promotions	194	1.588*	0.173
Aggregators	179	5.198*	0.008

* $p < 0.05$

*N*ote the following values are used in the analysis: df—number of degrees of freedom; F is the value of the F-criterion; Sig.—significance

$= 6.299, p < 0.05$) and aggregators are important ($F = 5.198, p < 0.05$), while for time ($F = 1.257, p < 0.05$), processing ($F = 1.300, p < 0.05$), and promotions ($F = 1.588, p < 0.05$), no relationship was found. Therefore, hypothesis H4 is partially supported. Indicators of time, processing, and promotions are independent factors, and menu and aggregators are related factors that need to be further promoted. Based on the analysis of MANOVA and ANOVA in SPSS 22.0, some of the indicators have a more complex relationship with each other, which is reflected in Tables 13.3 and 13.4. For further research, it is important to evaluate three criteria (time, processing, and promotions) and establish the dependence of the effect on the result indicator.

13.4 Conclusion

This study shows that the value proposition is influenced by various independent variables, including the competition index, the price for showing at the top of the search page, and the dependent variable, i.e., the level of competition. The value proposition plays a decisive role in stimulating additional intention to place an order for the delivery of restaurant products. This research shows that the price for showing at the top of the search page does not always have a significant impact on the competition level of the keyword among the queries of potential consumers. The five categories (time, processing, menu, promotions, and aggregators) can significantly influence on the competitive advantage development, including them as part of company's value proposition. This shows that an analysis of the competition index impact and the price for showing at the top of the search page on the level of competition can help increase the volume of online delivery orders for restaurants.

The analysis of the queries frequency from potential customers during the pandemic helps the industry respond to changes in consumer preferences in a timely manner and quickly change strategic business modeling solutions to gain a competitive advantage. In view of this, restaurants should be aware of the importance of

obtaining relevant information to take into account the peculiarities of a value propo-sition in the digital transformation of doing business during COVID-19. Relationship between the price for showing at the top of the search page and level of competition of query keywords significantly affects the products promotion, potential consumers' satisfaction, and operational characteristics of the products and service provided by restaurants. In addition, this study is one of the first attempts to investigate direct relationship between the competition index and the prices for showing at the top of the search page on the level of competition, and between the formation of a value proposition and the behavioral intentions of clients in the digital transformation of doing business under COVID-19 conditions.

13.4.1 Limitations

The research design also has some limitations. This article is specifically devoted to restaurant chains that are focused on the formation of value propositions. Studies comparing such companies involved in value proposition analysis with other compa-nies could provide a deeper understanding. In addition, the measurements used in this article were based on the Russian chain restaurant market of St. Petersburg city, but the same research methodology and design can be used with the example of other cities or industries. The rapid development of the COVID-19 virus began rela-tively recently, and in future studies, it is possible to focus on collecting another wave of data to more clearly determine cause-effect relationships, and on expanding the understanding of how the digital transformation of doing business in COVID-19 conditions. Such studies could entail both further quantitative analysis and the expansion of case studies.

13.4.2 Future Research

For future research, addressing the specific issues of this study, and general ques-tions regarding the creation of a value proposition taking into account the pecu-liarities of digital transformation of doing business in COVID-19, there are two possible options. Firstly, additional case studies, especially in different sectors, would provide a deeper understanding and help expand understanding of necessary strategic changes. Secondly, high-quality detailed interviews with experts directly from repre-sentatives of restaurant chains would reveal more about the significance of individual elements of a value proposition and their relationship with the queries of potential customers, as well as the presence of other elements that are relevant to the success of the digital transformation of entrepreneurship that were not fully investigated in this study.

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Chapter 14
Keyword-Based Wine and Beer Product Categorization

Luís Oliveira, Rodrigo Rocha Silva, and Jorge Bernardino

Abstract With the rise of e-commerce, product categorization has become more important than ever. Stock organization is key to attract more customers to an e-commerce business. The costumer needs to be provided with the tools to filter all the product which s/he does not want by specifying a few categories, being the big reasons why product categorization is so important. Therefore, product categorization is also important to Web marketing. In this work, we intend to categorize alcoholic drinks as wine or beer; for that, we used a method that scans the brand and product name for keywords and tries to categorize the product based on the keyword found. The datasets had also user reviews of the products, so we decided to analyze the most used words by users and which words are more frequent in positive reviews. For each dataset, when the products finished being categorized, we analyzed the average user rating of each one of the words used the reviews and the products, and then stored the information inside two different files. The goal of this work is to build a lightweight, simple categorization system and lay a foundation to a more complex recommendation system.

L. Oliveira (✉) · J. Bernardino
Coimbra Polytechnic – Instituto Superior de Engenharia de Coimbra (ISEC), 3030-190 Coimbra, Portugal
e-mail: a21270604@isec.pt

J. Bernardino
e-mail: jorge@isec.pt

R. R. Silva
FATEC - Mogi das Cruzes, São Paulo Technological College, Mogi das Cruzes 08773-600, Brazil
e-mail: rrochas@dei.uc.pt

R. R. Silva · J. Bernardino
Centre of Informatics and Systems of University of Coimbra (CISUC), 3030-290 Coimbra, Portugal

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14.1 Introduction

Currently, brands are expanding its business and making more and more products that belongs on a wide variety of categories, and that means we can no longer categorize a product just by its brand. A good example of that is The Coca-Cola Company. It started as a fizzy drink brand, but it has, since that expanded into other products, like chocolate milk, water, energy drinks, etc. [1].

Product categorization is an important step to make marketing, product research, and storage more efficient. Without it, it is more difficult, for a user, to filter a large dataset of products and find a specific one that s/he is looking for.

To a customer that is looking for a certain product of a certain category in a Web site or database but does not know, for example, the name of the product or its brand, it is a huge problem since some Web sites have thousands of products listed. To have a successful e-commerce business, a company needs a Web site that engages costumers [2] and recommending products, which the costumer may like or need, is in our opinion, a key factor in doing so. An e-commerce business must have a Web site, which guides a costumer to a product by showing the products of the categories that the costumer has given more attention to [3].

A method that is easy and useful to implement and can solve this problem is to check the products' names because it, normally, has one or more words that indicate the product category [4]. The words that indicates the category are called keywords, and it is the foundation of our solution to this problem.

In order to contend this problem and improve the user experience, to search and obtain recommended products, we have decided to build a software that analyzes a beer or/and wine products dataset that could contain user reviews. The software has the job to categorize correctly each product on the dataset as a wine or beer product. If the dataset has user reviews, the software also must split all the words in a review and make a list that contains each word used, the frequency of the word in the reviews of dataset, the average user rating to when the word is used, and the average user rating of each product.

The data collected from user reviews are one the bases of a recommendation system. If a review has one word that describes, for example, a thing that the user likes, or that has a sense of highly positivity toward a product and that product has a high average user rating, that product is probably going to be recommended to that user. We are not going to build a recommendation system but build a system that can be integrated and adapted into one.

The rest of this paper is organized as follows. Section 14.2 presents related works on product categorization. Section 14.3 presents the methodology used in this work and how we translated that into software. Section 14.4 presents the analysis results of our tests and the datasets that we analyzed. Finally, Sect. 14.5 concludes the paper and gives some ideas to future work.

14.2   Related Work

Product categorization is a huge and broad topic, and there are many papers about it which have been published in recent years. These papers have high impact because with the e-commerce growing more each day, categorizing the enormous number of products that the retailers sell is critical to an ecommerce business to succeed.

In [4], the authors propose to implement an NPC—Neural Product Categorization—model specialized in fine-grained product categorization. In this case, the proposed NPC aims to generate the product categories from the product contents, e.g., titles, attributes, descriptions, etc. They use three representative methods: Literal Matching (by using keywords), BiLSTM-CRF, and DeepCN. When analyzing the fail rate, the authors concluded that when only recognizing the product categories from contents (Literal Matching, BiLSTM-CRF), their model fails to complete the product categorization occasionally because they tend to not recognize any word as product category in some cases. However, with DeepCN, the problem does not happen.

The work described in [5] is probably the most similar article to ours because like our work, it focus solely on the title of the product, but the authors use a supervised machine learning algorithm to combat the fact that some products have a title which does not contain a keyword related to its category. They address the same problem that we do but in a more complex way because they try to identify cases where a keyword is ambiguous and can miscategorize a product. The word "Apple" is an excellent example of this situation. It is associated with several categories such as: computers, tablets, food, smartphones, and others. One of the methods that the authors used to prevent this problem is classify words by its importance depending on the number of categories which the word is correlated with. When dealing with a big dataset their method proved extremely effective even exceeding 95% in accuracy. Our work, however, is a much more lightweight and linear approach of this method.

Shushant and Irving in [6] built a system that has the objective of categorizing a large dataset of products in a more affordable way and straight forward way just like we planned on doing. Unlike our approach, they used machine learning algorithms to complete the task of categorizing thousands of products. They started by implementing a Naïve Bayes algorithm, because of its simplicity. First, they tried a Naïve Bayes model with Laplace smoothing on just the title specification, and they got an accuracy of around 70%. Then, they realized that the categories with less data had a low accuracy, and so, they decided to only use categories with 0.5% of the total number of products. This immediately improved to an accuracy of 75%. It is important to state that they ignored products with titles that have a low amount of words in its title. The products which they ignored did not have enough information in the title and as they said "the words just did not provide enough information to really provide a situation such that even a human would be able to properly classify one way or another." This problem is not encountered in our case since we are dealing only with the beer and wine categories. They also removed grammatical syntax fillers and prepositional terms as they got a boost of accuracy of 10% by doing it. Despite

being the center point, Naïve Bayes was not the only machine learning algorithm that was applied to their datasets. They also used K-nearest neighbors ($k = 5$), which got a 69.4%, and a tree classifier which reached the highest accuracy with 86%.

We are using this project as a way to improve our knowledge on product categorization by studying other articles that use more complex techniques and at the same time trying to help someone that is looking for an easy way to sort product or any objects that are stored in a dataset.

14.3 Methodology

This section presents how we approached the challenge and how we translated our methodology into a software algorithm.

Each product has a set of words in its name that can help us to categorize it [4]. For example, red wine products often have the word "red" in its name. This is how we approached this problem. We had decided to research some of the most famous brands and most used terms for each category and put it on two separated keyword lists, one for beer and one for wine. If a product has one of the brands full name, that are stored in a wine or beer brand list, in its name, we give the product that brand category. If the product does not have a brand name, stored in one of the two lists, in its name, we search each word of the product name for keywords, and if the product has any, we associate the product to that keyword category.

The user can manually change the beer or wine keyword list if he thinks that it is incomplete or if some product was miss categorized. This algorithm depends heavily on the keyword lists, and the keyword lists depend on the user judgment of the results and knowledge on the categories. The more refined and diverse the two keyword lists are, the accurate the algorithm becomes. If the user wants to add a new category to classify a product with, s/he just needs to add a new keyword list into the system and associate that keyword list with the category which he wants to add.

14.3.1 Software Algorithm

We decided to integrate our methodology into code by using the programing language C+ +, because of the class integration and because how acclimated we are to it.

The algorithm consists in a loop that goes through a.csv file that contains a dataset, row by row. For each row, the software analyzes each column necessary. What we mean by necessary columns is, columns that have, for example, brand names, review text, product names, etc. This loop ends when the file has no rows left or the analysis row limit has been reached. The analysis row limit is specified by the user. Depending on the column that is being analyzed, the software does an action. To help explaining the algorithm and the methodology, Fig. 14.1, shows a flowchart of the loop that goes through every row of the.csv files that we are going to use and contain all the data.
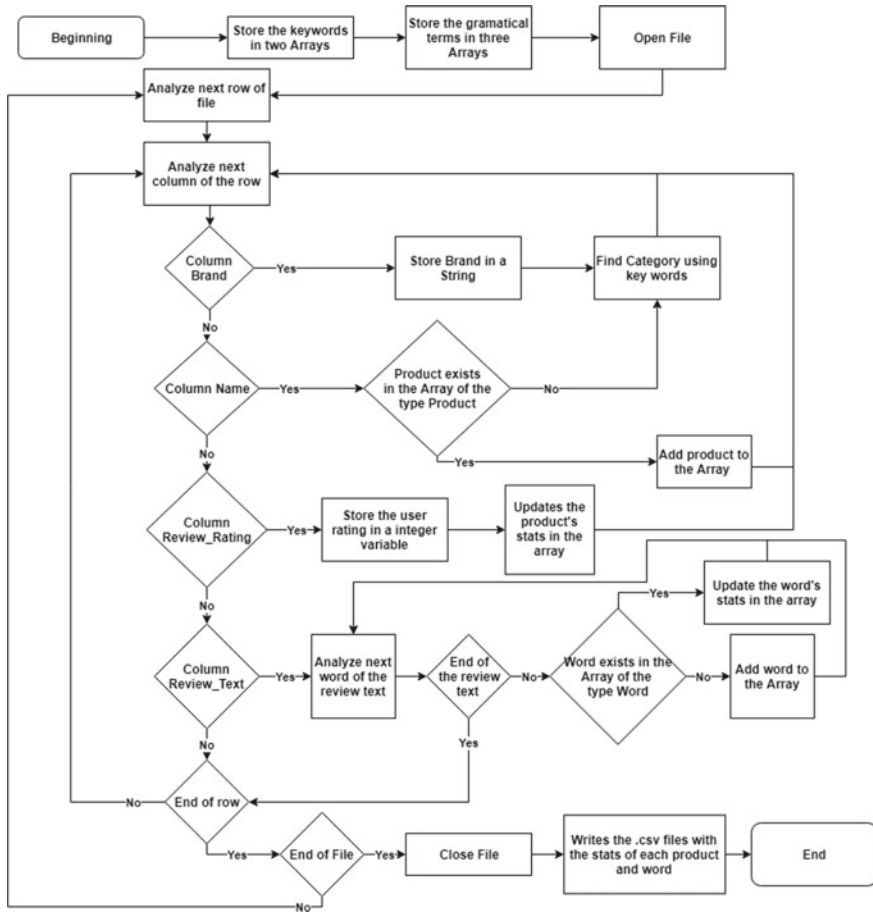
Fig. 14.1 Flowchart of the loop used to analyze each row of the.csv file

Word Analysis

For each row, when the column loop reaches the column that contains the user review text, it stores the full review on a string. The string is then split into words that are separated by a blank space. Each word that is separated of the review text string is then analyzed to see if it has any non-alphabetical characters. If the word has any non-alphabetical characters, those are removed to prevent cases like, for example, "good!" from happening. When the word is no longer being processed, the system checks if the word already exists in the word array that stores objects of the Class Word. If it already exists, when the column loop reaches the review rating column, the software updates the attributes of the object. If it does not exist, the word is then added to the array with the current row information.

It is important to state that grammatical terms like pronouns, conjunctions, and determiners are not included in the word array, since those words do not express anything about the product. When the software begins running, before analyzing the.csv file, it reads three.txt files (conjunctions.txt, determiners.txt, and pronouns.txt), that contain the respective grammatical terms, and stores the information contained in these files into three string arrays: one for conjunctions, other for determiners, and another one for pronouns.

The content of these arrays is compared to each word that is being split from the review text string. If the words are confirmed to be one of these grammatical terms, the system ignores them.

In Fig. 14.1, we can observe that this section of the algorithm uses the columns "review_rating" and "review_text." Everything explained in this topic is also explained in a more intuitive and graphical way in this figure.

Product Categorization and Analysis

For each row, when the column loop reaches the column that contains the brand of the product, it stores the content of it in a string. First, it checks if the whole string is equal to a wine or beer brand, which are contained in two.txt files (beer.txt and wine.txt) alongside beer and wine keywords. If it is, the software categorizes accordingly. If it is not, the software splits the string into words, just like in the word analysis, also removing the non-alphabetical characters and the compares each word to the wine and beer terms. Again, if any of the words are equal to a term, the software categorizes the product.

If any of these steps failed (it cannot categorize the product as beer or wine), the software then jumps into the column that contains the name of the product and does the same steps that in the brand column. If the software cannot categorize the product into wine or beer, it categorizes it into "other."

Also, in the name column, the program checks if the combination of the brand and name exists in an array that stores objects of the Class Product. If it exists, it updates the object's attributes when it reaches the review rating column. If it does not exist, the program creates a new object with the current row information.

Figure 14.1 helps to realize the algorithm in a graphical, more intuitive, and resumed approach.

Wine and Beer Terms/Keywords

Just like the grammatical terms, the wine and beer terms are read in the beginning of the program, before the row loop starts, from two.txt files (beer.txt, wine.txt) and stored in two string arrays: Wine_terms and Beer_terms.

The content of these arrays does not consist solely of individual terms, it also contains brand and product names. That is why the program, when in the right column, compares the full column string and only then compares each word of it.

14.4 Results

This section presents the tests that were made using the software that we built. The software analyzed wine and beer review datasets that we found online and though that were appropriate to these tests. Also, in this section, we will point out problems found with the test results.

14.4.1 Experimental Setup

In this experiment, the software will analyze the datasets mentioned below and will output data that show the number of beer and wine products, but also the most frequent words used and its stats. The hardware used in this experiment is the following: Acer Aspire V5–591, Intel Quad-Core I7-6700HQ 2.60 GHz, NVidia GeForce GTX 950M, 16 GB DDR4.

The datasets used are available for public use online and can be found and downloaded in.csv format on a Web site called "data.world" [7]. We chose these datasets because they contain a high number of products and integrated user reviews. The datasets are the following: **Dataset 447_1** (34 columns and 1231 rows) and **Dataset WineReviews** (32 columns and 2890 rows). In both datasets, we used the columns: brand, name, review_text, and review_rating.

14.4.2 Results

The results will be shown in order by dataset, and it will start in the dataset 447_1.

In Fig. 14.2, it is displayed the percentage that each category represents in the dataset. Also, below, we have Table 14.1, which show us the top-ten words used in user reviews.

In Fig. 14.3 and Table 14.2, we have the results of the experiment of the WineReviews dataset. In Fig. 14.3, we can see the percentage of each category, and in Table 14.2, we can see the ten most used words in user reviews.

Figure 14.4 displays the run time of the algorithm in each dataset used in the tests. The run time includes the word analysis, product analysis, and the creation of the.csv files with the information of the statistics of each word and, beer, and wine of products.

447_1 Product Categorization
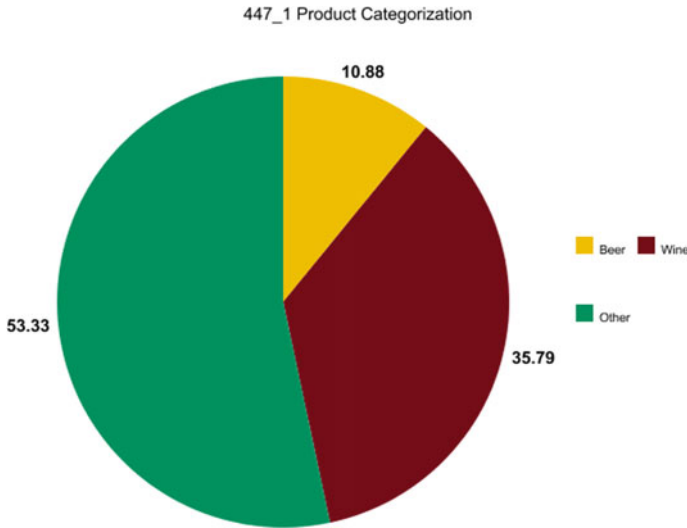
Fig. 14.2 Percentages of product categories of 447_1.csv

Table 14.1 Top-ten most used words in reviews of 447_1.csv

Word	# of times used	Use rating average
to	808	4.36881
is	618	4.50971
for	514	4.47471
with	367	4.61580
in	353	4.53541
Great	299	4.81605
was	296	4.13514
have	287	4.53310
good	265	4.50189
4 (blank space)	226	4.23894

14.4.3 Analysis of the Results

Now that the results were shown, we can see that in Tables 14.1 and 14.2, only some words are useful to use to recommend a product. In Tables 14.1 and 14.2, the top-three most used words cannot be used to recommend a product or to tell us an emotion felt by the user about a product. This can probably be fixed by restricting even more the word groups that are ignored by software.

We can also see, in Table 14.1, that one "word" that is in the list, is simply a blank space. This is because in the algorithm we split the words using the *getline* function
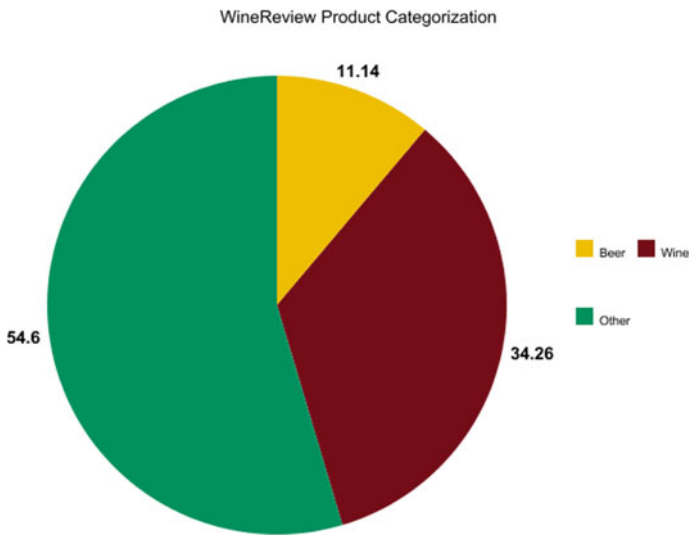
Fig. 14.3 Percentages of product categories of WineReviews.csv

Table 14.2 Top ten most used words in reviews of WineReviews.csv

Word	# of time used	User review average
to	2106	4.46771
for	1500	457400
is	1464	4.55055
in	1332	4.59309
have	1055	4.65119
lips	857	4.91482
with	768	4.49349
was	758	4.24538
carmex	731	4.93844
on	652	4.56902

Fig. 14.4 Run time, in seconds, for each dataset

that splits words when there is a blank space between them. This causes a problem when two words are separated by two or more blank spaces.

Regarding the product categorization, there are some miss categorizations caused mostly because of the miss interpretation of a keyword by the software algorithm. The problem is that some keywords are essential in one category but can also appear in the other, for example, the word "red" is an essential word of the wine terminology but can also be used to describe some beer, and that leads to some bear to be categorized as wine. Upon some manual inspection of the categorization, the error percentages of the dataset were as follows:

- Error percentages in the dataset 447_1: **6.25%** in beer and **0%** in wine.
- Error percentages in the dataset WineReviews: **5.12%** in beer and **3.44%** in wine.

For a lightweight system like this one, the error percentages displayed above are considered a great success. Although, it must be stated that the error percentages are so low because of the two datasets that we used containing a small number of products. The error percentages would probably be a little higher with a much bigger dataset.

14.5 Conclusions and Future Work

Brands are no longer linked with just one category of products. As brands realize the potential of other markets, they release more and more products to try break in those markets. This is one of the most challenging aspects of product categorization. Since we chose to use keywords, that problem is in majority defeated, but there are still some instances of our algorithm miss categorizing a product. A practical example of that is "Red Ale." Since the first word is red, the algorithm thinks the product is red wine. Despite this being an edge case, it is one of the problems that prevents major companies from using this method without machine learning algorithms and ontologies.

Despite the good results, in the future, we would like to prevent this by adding some more restrictions to how the algorithm categorizes certain products, like, again, "red ale." One measure that we could implement is to make the algorithm give more emphasis to certain words in the product name such as "ale," "wine," and "beer." Words like that give the literal categorization of the product.

We can also add more grammatical word groups to a restrictive word list to prevent more useless words (to recommend a product) from being added to the array the contains objects of the Class Word.

Despite being easy to implement in almost any software language, this method has limitations and is not appropriate to be used with large e-commerce business with many visitors because this algorithm would have higher error percentages with larger datasets. The main purpose of this work is to give junior developers, suggestions of how to start a recommendation system and to highlight the most important challenges.

As future work, we intend to use the wine dataset generated by this categorization system to develop work on recommendation systems and the importance of ontologies.

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Chapter 15
The Role of New Technologies in people's Retention, Turnover and Internal Marketing: A Literature Review

Sara Muna Silva, João Leite Ribeiro, and Bruno Barbosa Sousa

Abstract Information Technologies (IT) are fundamental for the processing of information or, more specifically, the use of hardware and software to convert, store, protect, process, transmit and retrieve the information, from any place and at any time. Information of technology has emerged along with globalization, which has connected the world behind the development of systems that are able to connect people from any place across the world in seconds, opening the market, creating more options that can meet the organization's necessities of Human Resources Management covering its origin, its dominant perspectives, the evolution of the concept and its dimensions, and emphasis is given to the actions and activities of Internal Marketing suggested by the literature, as well as the tools used for an effective practical implementation of this, within the organizations and also how this area of studies is so related with HRM. Job satisfaction is the answer for the decreasing of turnover, increasing of retention and the management of IM which not only translates into higher sales and loyal consumers, but also means less costs with workers by boosted performance. As key persons in organizations who are responsible for a capable workforce, HR managers must have full and real-time information to measure, predict and manage workforce change and development. The adoption of IT by HRM is important for growth as organizations face rapid changing environments. More specifically, the systems of IT adopted by HRM contain HR Information System, HRM System, e-HRM.

S. M. Silva (✉) · J. L. Ribeiro
School of Economics and Management, University of Minho, Braga, Portugal
e-mail: pg35716@alunos.uminho.pt

J. L. Ribeiro
e-mail: joser@eeg.uminho.pt

B. B. Sousa
IPCA – Polytechnic Institute of Cávado and Ave, Barcelos, Portugal
e-mail: bsousa@ipca.pt

CiTUR and UNIAG, Barcelos, Portugal

15.1   Introduction

Technology and globalization are drivers that drive change in organizations and HRM. Nowadays, having the ability to manage these changes is indispensable for their success, after all, companies need to develop a culture that remains in constant adaptation [1]. This includes "change engineering" in which it is necessary to reallocate people, engage their most important employees, customer and suppliers, lead clearly and consistently and maintain continuous communication, creating quantifiable benefits considering the human factor as the main cause of failure in change projects. Therefore, the advancement of technology in people management is inevitable, and the HR sector has been following the changes that the world has been suffering after the emergence of the Internet and globalization. The present study aims to verify, through the analysis of the telecommunications field, to demystify the strategies that are being used, in a technological era, to achieve organizational goals. Given the rapid changes in technology in the past decades, technology has had a significative impact on Human Resources Management, and technology evolves it which is likely to move the field in some new directions in the future. The world has experienced cultural, societal and economic changes based on the increasing domination of digital technologies. In sum, these changes have led to the current period called the digital age or digital era [2]. Digital technologies play an increasingly flagrant role in both the lives of employees and Human Resources Management, which seems to be affected in multiple ways [3]. This special issue focuses on the impact of these changes on Human Resources Management, in relation to changes to the workforce, to Human Resources Management in general and more specifically to the use of technology in delivering HRM activities. Along with the technological transformations and advancement of the Internet, a concept that is called electronic Human Resources Management (e-HRM) is emerged which uses information technology in two ways: Firstly, technology is necessary to connect people who are usually segregated in different spaces, and it allows interactions between them; in this way, technology is serving as a medium with the aim of connection and integration; secondly, technology supports all people involved completely, replacing them in the execution of HR activities.

15.2   Theoretical Background

Changing, for many people, can be a complex and painful experience. The various situations of transformation experienced are unique and potentially stressful. Therefore, change is both a challenge and a basic source of growth [4]. For [5], the concept of change translates into simple behaviours that adjust to different motivations, as is the case of changes that occur in the internal or external environment of the organization. The concept of organizational change has been widely studied, so it is possible to find in the literature several definitions. Lines [6] defines organizational

change as a deliberately planned change in the organization's formal structure, in order to achieve organizational goals. Other authors define organizational change as the process by which an organization improves its performance in order to be successful in their activity [7]. Looking at the technical side, organizational change happens when organizations undergo some transformation [8]. The concept of organizational change is often referred to when it comes to organizational learning, since they are related [9]. However, change and learning are two distinct dimensions that can occur simultaneously or separately. They are, therefore, differentiated concepts since the concept of learning involves a cognitive progress, whereas the change can occur without learning, that is, organizational learning implies understanding the underlying reasons for changes beyond the behavioural response that often occurs in organizational change. However, not all forms of learning require understanding, in this way, learning requires both change and stability in the relationships between learning subjects and the surrounding environment [5]. Modifications, in a passive perspective, may occur as a reaction to a change or as a response to a crisis. On the other hand, from a more active perspective, they may arise from the fact that organizations have more dynamic and bold leaders [6]. According to [10], changes that occur within an organization should be analysed, since whether they arise in a preventive way or arise for external reasons, these strongly influence the behaviour of organizations. Therefore, as mentioned above, organizational changes be a learning process for organizations, as these changes bring them new dynamics. Following on the organizational change, it will be presented the three organizational change' models: Kurt Lewin's Model, Kotter's Model and McKinsey 7S' Model.

15.2.1   Models of Organizational Change

Throughout the years, organizational psychology has been studying several models to follow when an organizational change occurs. The three most talked models are: Kurt Lewin's model, Kotter's 8-step model and Mackinsy's 7S model [8], so let us see in detail each one. In order to explain the organizational change, Kurt Lewin made an analogy with an ice block. Therefore, for organizational change to be successful, it should go through three phases:

(1) Defrosting—This phase implies a rupture with the previously adopted procedures, thus allowing the arrival of new ways of acting;
(2) Change—At this stage, all elements of the company have begun to reduce their uncertainties and will begin to believe that change can be beneficial for both parties and because of this, managers must communicate clearly the objectives of the change and what steps must be followed to reach them;
(3) Refreezing—In this phase, it is important for the organization to promote stability since the changes have already been made, for example, a new structure and behavioural pattern is institutionalized [8].

For [11], organizational change will be successful if the following eight steps are followed in order to establish employment commitment and reduce scepticism: (1) Creating the need—is to demonstrate that change is necessary and realize this through market analysis, identification of potential crises; (2) Create a strong alliance—it consists of bringing together the right people to lead the organization in the direction of change and continue to provoke the need for that change; (3) Create a vision for change—at this point, managers need to determine exactly the core values for change, for example, it is necessary to create a vision and develop strategies to achieve that vision, to direct all efforts made; (4) Communicate this vision to the whole organization—therefore, all communication channels must be used in order to communicate the new vision and strategy, and it is still important to teach new behaviours by setting an example to follow; (5) Encourage actions of change—this topic emphasizes that all obstacles that arise must be removed, that is, it is necessary to change behaviours in order to meet the new vision; (6) Create continuous success steps—organizations must achieve visible performance improvements, recognize and compensate those who bring improvements to the organization; (7) Promote change—here, improvements must be made, so that change occurs and is established; (8) Ensure lasting change—which is to persist in change and to make sure that modifications will continue to exist [8]. The McKinsey 7S' model is intended to show how seven different elements of the organization can be aligned with the goal of achieving effectiveness in the workplace. This model includes the following key areas:

- Strategy—defining the approach that the organization will adopt to achieve its objectives;
- Structure—how resources are organized within an organization;
- Skills—the tools an organization has;
- Staff—the people who make up the organization;
- Style—related to organizational culture;
- Systems—the processes through which the organization acts;
- Shared values—this is essentially the vision and mission of the organization.

All seven elements are interconnected, so when there is some change in one of these elements, the other ones also have to be changed [8]. Empirical studies on organizational change include those of [12], who analyse the process of change from the internal/external context of the organization, the content of change and the process. The author defines the external context for the social, economic, political and legal and competitive environment in which the organization operates. The internal context implies the structure, organizational culture and political context of the organization. When it comes to content, it refers to areas for change. Finally, the process is analysed by the actions, reactions and interactions between the various areas involved in the change and in the future of the organization. Therefore, it is possible to verify there are several models that can be followed in order to facilitate the operationalization of the change. However, the adoption of one or the other model is not a guarantee on its own that the change is successful because of the many factors that influence it.

When change occurs in an organization, a part of the organization will feel a transformation. Thus, some of these changes can be quite radical and can result in more efficient and effective organizations if the change is successfully implemented [13].

15.2.2   The Role of HRMP in Organizational Change

Change processes can be managed in a variety of ways. However, few organizations are concerned with levels of resistance to change and invest in communication, training and employee awareness [14]. These organizations recognize that employee involvement is a factor of success in implementing change as workers must, somehow, have to change their behaviour to fit the organization's new challenges. As for organizations that manage change processes without taking into account the influence of the human factor, in addition to increasing the probability of failure, they compromise the organizational environment [15]. Considered that the role of HR was based on tasks such as: finding solutions for the development of organizations, creating conditions to retain employees in the company, but also creating and stimulating changes in the organization to adapt to new consciousness. The same authors indicate that, in the last decades, great advances have been observed that leads the organizations to investigate new forms of management, with the goal of improving performance and achieving results that meet customer needs. The main obstacles to the implementation of improvements are essentially related to the lack of training of employees, the unfavourable motivational environment, the lack of working conditions and difficulties in the use of new technologies [16]. Although organizations are aware of many barriers during the implementation of a new strategy, they rarely consider the risks caused by the vulnerability of their human assets [17].

Therefore, organizational changes have presented new challenges to management, in particular to the HRM. Therefore, it is also the function of HRM to develop the capacity of the organization to accept the various changes and to develop through them. With this, it is up to the HRM to develop initiatives aimed at its good performance which is the search for organizational flexibility and the management of modification is, in this way, fundamental concerns of the HRM [18]. For [19], the HR area must play an important role in the development of strategy and organizational change, as it takes more care to attract, maintain and develop the skills needed to achieve the organization's objectives. Another challenging aspect to be considered in the process of change is the organizational culture. According to [20], the process of change cannot be separated from the organizational culture, due to the great influence it exercises throughout the process. The same authors also affirm that the stronger the organizational culture, the deeper the influence will be. Thus, in the opinion of the authors, organizational culture acts as an element of consensus. As it turned out, the literature shows that some authors argue that for managers of organizations that are continually changing to be successful, they must communicate clearly to their employees what their responsibilities and priorities are, giving them the freedom to improvise [21].

Therefore, in a process of change, communication is extremely important, and it is strongly related to several HRMPs such as description, analysis and qualification of functions, recruitment and selection, reception and integration, and performance evaluation among others. Consequently, communication within an organization can assume a function of control, motivation, emotional expression and information, and all these functions are well present in the HRMP. The individuals involved in the process of change adopt it according to their own logic, developing more or less favourable attitudes towards it: agreement or resistance. It is possible to affirm that when organizational changes occur, the fact that there is a greater involvement of the workers makes possible the assimilation of the changes that have occurred, which can result in a learning process. On the other hand, when organizational changes are imposed, changes occur that tends to be captured more superficially [10]. It is possible to see that organizational change goes hand in hand with organizational learning, so it is possible to establish a correspondence between both concepts when studies [22] point out that training as well as systems of rewards is decisive for the constitution of learning organizations. Therefore, the admission of new employees, training as well as participation in the decision-making process positively influence organizational learning, and therefore, organizational change processes. Training and development, integrated in the project of organizational development, as a device of change is, increasingly, a clear contribution to the organizational performance. It allows a proactive change culture, allows the updating of knowledge and skills and mobilizes the internal and external knowledge of the organization [23].

In addition, it has been shown that the process of training and development is associated with the motivation and satisfaction of the workers. At a time when business change is constant and dramatic, engaging and motivating employees, conveying the company's goals, mission and strategies in order to create a common ground in the performance of its functions is essential [24]. People must be strongly involved in the change process, since they have an indispensable role for the organizational strategy. People depend on organizations to be able to sustain themselves and to be able to perform professionally. On the other hand, organizations cannot survive without people, since they are these sources of life, activity, rationality and creativity. However, the continuous organizational changes that people are exposed many can bring many challenges to their ability to react, as they require constant adaptation. Also, when pressures for change are greater than the adaptive capacity of those involved, the body tends to suffer, especially when the process of change is perceived as a cause of loss [25]. Human Resources Management is therefore considered an important force in achieving organizational effectiveness. In this way, it is important to understand which HRMP positively influences the organizational commitment that naturally leads to organizational effectiveness. In summary, the literature shows that processes of change are inevitable. [23] developed a study in which they verified that, from the several cases studied, all organizations underwent several organizational changes, that is, they underwent organizational changes in the different systems that make up an organization. In this way, the success or failure of these initiatives has much to do with how changes are managed. Therefore, the degree of involvement

of the people and their perception of this process is a key factor: Employees' knowledge and skills are among the decisive workplace factors determining the employees' readiness for change. All the HRMPs adopted by the organization help in the process of implementing strategic change [17]. Consequently, to the organizational change, nowadays, day by day a growing number of organizations use new technologies in Human Resource processes. The Internet has brought some changes in the way of recruiting. The Internet has emerged as a recruiting tool in the 1990s, and according to [26], it has grown quickly over the past few years and is nowadays widely used by employers and job seekers around the world, as it will be analysed in the next topic *: e-HRM*.

15.2.3   e-Human Resources Management

Along with the technological changes and advancement of the Internet, has a concept that is called electronic Human Resources Management (e-HR) is emerged which is defined as a management model focused on the Human Resources, relying on the information technology, to take part of different roles of HR [27]. Therefore, HR functions as recruitment that has the highest frequency of application on the Internet, followed by communication, benefits information, online training, stock option information and online performance assessment. Online recruitment tools allow receiving job applications, a quick triage and feedback to candidates and because of this, it is considered a fast method and able to reach a wide audience. This is called e-HRM which is defined as a system that allows managers, applicants and employees access to Human Resource-related information and services through the Internet, an organization's intranet or Web portal [28]. The literature shows other definitions for the concept, and there is no common agreement about the definition of electronic HRM [29]. Strohmeier [30] defines it as "the planning, implementation and application of information systems (IS) for both networking and supporting actors in their shared performing of HR activities". For [31], e-HRM is an "umbrella term covering all possible integration mechanisms and contents between Human Resource Management (HRM) and IT aimed at creating value for targeted employees and managers". It is considered such an interesting topic in the HR field because the adoption of e-HRM is expected to confer many advantages on organizations, such as a more efficient and strategically oriented HR function and an increased competitive advantage.

Online recruitment is a way to draw potential candidates to the market more expansively, as Internet access is increasingly comprehensive. Thus, the ascendancy of this type of people management tool tends to be increasing since it is a fast, effective and safe method and leaving the organization with a database of possible future candidates for future vacancies. And in addition to recruitment, selection is a function of HR that is being done over the Internet with the use of analysis of the curricula provided online, after the application of the online test, video conferences, language tests and after these selections that candidates approved for the vacancies will be called to the presence stage where for having dynamics of groups, interview

with manager among other applied tests, since each organization uses a method of selection. Both organizations and candidates consider recruiting over the Internet to be the most inexpensive, fast and potentially most effective way being these the main advantages of it [1].

Lepak and Snell [32] distinguished three areas of HRM as operational HRM, relational HRM and transformational HRM. An Information System is a system made of human resources (staff), material resources (equipment) and procedures that enable the acquisition, storage, processing and dissemination of information relevant to the operation of an organization, whether or not the system is computerized. e-HRM has been used with HR Information System (HRIS) [33], virtual HRM, Web-based HRM, intranet-based HRM, HRM e-service, business-to-employee systems B2E and HRIT. Heikkilä [34] has stated that e-HRM has been interchangeably used with HR Information System (HRIS), virtual HRM, Web-based HRM, intranet-based HRM, HRM e-service, business-to-employee systems B2E and HRIT [4]. The Enterprise Resource Planning (ERP) applications are software suites that help organizations integrate their information and business processes and typically support the different departments and functions in the organization by using a single database that collects and stores data in real time [35]. During 1990–2010, Web-based ERP systems helped the HRM department in recruitment, selection, training, performance management and compensation. In the last years, we are watching the transition to the cloud computing, leading to an increase of mobile technology by the organizations [36]. Therefore, the selection of potential employees is shifted to an electronic selection, with the increased use of social media [37]. Since its inception, e-HRM has often been labelled Human Resource Information Systems (HRIS). Walker [38] defines HRIS as a systematic process which collects, stores, maintains, retrieves and validates the data related with the Human Resources, personal and organizational activities. The current phase of People's Management has been strongly influenced by information technology, which plays a fundamental role in all segments of the organization. Definitively, the quick technological evolution of our days and the increase in the level of people who hold a high technological literacy suggest that it would be important to companies which review their strategies with the help of the Human Resources Management. In this sense, digital literacy is understood as a broader set of technical and mental skills to acquire, process, produce and use information which turns out a crucial key qualification for more and more employees [39].

15.3 Human Resources Management Information Technology

Information technologies (IT) are fundamental for the processing of information or, more specifically, the use of hardware and software to convert, store, protect, process, transmit and retrieve the information, from any place and at any time. Information of technology has emerged along with globalization, which has connected the world

behind the development of systems that are able to connect people from any place across the world in seconds, opening the market, creating more options that can meet the organization's necessities [40]. IT includes a sort of hardware and software products that proliferate rapidly with the ability to collect, store, process and access numbers and images [41]. The phenomenon of IT has had widespread effects on almost every aspect of our society daily. From the invention of the telegraph to the creation of smartphones, it has changed the way that we live our lives and do our jobs. For example, technology has altered the way that we purchase products, communicate with others and receive healthcare services, manage our finances and the way that we teach and learn. It has also had a profound impact on organizational processes, including those in Human Resources Management [42] and transformed the way that organizations recruit, select, motivate and retain employees.

The operational side has been one of the big impacts on HRM. For example, nowadays, the payroll is automatic, and all the employee's information records are available in a program that can be accessed by the managers themselves who can also change and update the information; other example is "self-service" at the IRSH has been one of the major trends in recent years, and these changes and possibilities have helped to reduce the large amounts of document that RH department had to file and constantly update. Besides the payroll automatization, information records and benefits are other subjects that HR can also use software in all other activities such as recruiting, previewing and testing candidates online before even hiring them and after hiring be able to conduct training and employee promotions. e-HRM uses information technology in two ways: firstly, technology is necessary to connect people who are usually segregated in different spaces and exists enable interactions between them, and in this way, technology is serving as a medium with the aim of connection and integration; secondly, technology supports all the people involved completely, replacing them in the execution of HR activities. Hence, information technology also serves as a tool for task fulfilment and, with the planning aspect, highlights the systematic and anticipated way of applying information technology. In here, exists interaction and networking by sharing tasks between people which suggests that the sharing of HR activities is an additional feature. Finally, the consideration of individual and collective actors considers that e-HRM is a multilevel phenomenon; besides individual actors, there are collective actors like groups, organizational units and even whole organizations that interact in order to perform HR activities.

15.3.1   HRM in a Digital Era

The world has experienced a cultural, societal and economical changes based on the increasing dominance of digital technologies. In sum, these changes have led to the current period called the "digital age" or "digital era". Digital technologies play an increasingly flagrant role in both the lives of employees and HRM, which seems to be affected in multiple ways. This special issue focuses on the impact of these changes

on HRM, in relation to changes to the workforce, to HRM in general and more specifically to the use of technology in delivering HRM activities. New technologies have created a new generation of employees and the organizational structure has changed. The changes are organized in a way that today, the absence of organization on the *www* (World Wide Web) means the loss of huge capital resources. Nowadays, the business faces many challenges such as globalization, the value chain for competitiveness and technological changes, especially three focal areas labelled as digital employees, digital work and digital employee management [2]. The concept of "digital employees", a first major area, has various terms such as "digital natives" [3], "millennials" [43] or "net generation" [44], and it is assumed that the early interaction with digital technologies has shaped a new generation of people with distinctively different attitudes, qualifications, behaviours, multitasking capabilities, expectations and learning by doing and preference of instant gratifications and frequent rewards.

In order to acknowledge the diversified skill set needed in times of, [45] defined an individual's digital competences as the individual capacity to use and combine one's knowledge (know-what), skill (know-how) and attitude (know-why) associated with three related competence areas, technological, cognitive and social, to use them to analyse, select and critically evaluate information in order to investigate and solve work-related problems and develop a collaborative knowledge base while engaging in organizational practices within a specific organizational context". A second main area might be called "digital work", referring to the organization of work. Relating to work content, the ongoing digitalization implies an increasing automation of manual and routine work and a change on the remaining tasks towards "brain and information work. All information today is either digital, has been digital, or could be digital", so the work of employees more and more depends on digital tools and media also. Moreover, work organization is affected by digitalization. Digital technologies have enabled new forms of organizing work that ranges from single virtual workplaces, to virtual groups, teams or communities, and even to virtual organizations [46].

While there are diverse varieties of organizing work digitally, the predominant principle is to support and connect task performing humans by resources of digital information and communication technologies, and to organize work across the world and time management in any desired way. Therefore, members of such virtual units are often remote and unknown. Managing such members is clearly different from managing conventional employees in a lot of aspects such as leadership, performance feedback or development, while still a lot of practical aspects are not sufficiently tackled. "Digital employee management" is third area of digital change and refers to the planning, implementation and, the application of digital technologies to support and network the HR profession, a phenomenon also known as e-HRM [29]. Meanwhile, not only administrative HR functions such as payroll processing, attendance management or record keeping, but also managerial HR functions such as compensation, performance management or development are "digitally" supported and enabled and thereby often deeply changed. Moreover, digitalization has also affected HR organization, by establishing new actor categories, as for instance employees incorporated via digital self-service, and by establishing new kinds of cooperation subsumed

as "virtual HR". In consequence, HR qualifications also show a clear shift to incorporating technical implementation and application skills (Hempel 2004). It is hoped to improve operational aspects, such as costs, speed and quality of HR processes, relational aspects, such as corporation and trust among HR stakeholders, and also transformational aspects, such as the strategic orientation, organization and standing of the HR function [42]. So, technology and globalization are drivers that drive change in organizations and HRM. Nowadays, having the ability to manage these changes is indispensable for their success, after all, companies need to develop a culture that remains in constant adaptation. This includes "change engineering" in which it is necessary to reallocate people, engage their most important employees, customer and suppliers, lead clearly and consistently, maintain continuous communication, creating quantifiable benefits considering the human factor as the main cause of failure in change projects. Therefore, the advancement of technology in people management is inevitable, and the HR sector has been following the changes that the world has been suffering after the emergence of the Internet and globalization.

15.3.2   Internal Marketing

The origins of Internal Marketing started in the seventies, when it was recognized the importance of attending the needs of the employees, so that they are able to offer quality services, in order to satisfy their clients. [47] argued that Internal Marketing could be applied to change organizational capacity and not only service delivery, at the same time that the internal communication to be promoted would allow understanding the difficulties in customer service, developing the potential of employees in the execution of a superior service. In this way, Internal Marketing was a solution for companies to offer an exception service. According to these authors, activities such as disseminating the decisions made, obtaining frequent feedback, training and rewarding employees who serve clients with excellence fulfil the objective of Internal Marketing. Sharing the same view, [48] argued that organizations should understand their employees as their first market. In this relational perspective, Internal Marketing meant that managers and the other members of the organization were essentially partners, treating the organization as their employees' clients, and therefore, they could perceive their clients more clearly in the delivery of services. In view of this view, it is definitively important to mention the value of the Nordic School, which made a very important contribution in the study of Internal Marketing. The origins of this School go back to the early seventies. It is a School of Marketing way of thinking that has developed through service marketing research in Scandinavia and Finland, thus gaining international knowledge. In the 1990s, it was developed within a framework of a relational marketing thinking school [49]. It should be noted that it was the Nordic School researchers who emphasized the nature of the relationship and the long-term in-service marketing, creating terms such as "buyer–seller interactions"; "Customer relationship lifecycle" [50]; "Internal marketing" and "part-time marketers". Gummesson [50] emphasizes the importance that these employees have

in relation with the clients, since these influences the relations with the clients without belonging to the department of marketing or sales. Given the complexity of the concept, several definitions have been developed, and to date, there is no consensus definition. In fact, this area still needs studies to consolidate its importance as an academic discipline and organizational management philosophy, which is why its practical application is not yet a generality in companies. Taking into account of the complexity of the concept, several definitions have been developed, and so far, there is no consensual definition [51]. The definitions found in the bibliography are varied and can be grouped into four dominant perspectives: (1) As a synonym of Human Resource Management; (2) As a use of marketing techniques in the internal market; (3) As a precondition for satisfied external customers; (4) As a way to achieve competitive advantages.

Internal Marketing is the permanent training of service providers in order to improve the knowledge of their services and their capacities, making them aware of the opportunities and the marketing skills. The author justifies his opinion, arguing that there is a need in companies to establish a close integration between different functional areas. It considers that the application of Internal Marketing can achieve this interdepartmental integration, which can align efforts around common goals. However, this approach is somewhat limited, as it neither does reflect customer orientation, nor does it contemplate strategic marketing management. Furthermore, all successful management programs require commitment from top management and employees [52], and Internal Marketing is no exception. Top management commitment is the most important factor that affects the effectiveness of Internal Marketing in the manufacturing environment. In studying the implementation of Internal Marketing, service climate and supportive management affect the attitudes and behaviours of service employees. Cascio [53] showed that supervisors would influence employee perceptions and performance significantly due to their proximity to employees. Ahmed and Rafiq [52], on the other hand, reported that frontline employees perceive top management commitment as having a greater effect on employee work behaviours than the influence of their immediate supervisors. Ahmed and Rafiq [52] also suggested that organizations should employ Internal Marketing to convince employees that top management is committed to enhancing employee satisfaction, empowerment and service quality. In the social-exchange theory, it reported that employees who recognize top management commitment to employees' needs may reciprocate to have better work attitude as expected by top management.

15.4   Final Considerations

Technology and globalization are drivers that drive change in organizations and HRM. Nowadays, having the ability to manage these changes is indispensable for their success, and after all, companies need to develop a culture that remains in constant adaptation. In this preliminary research, it is possible to respond to the problem of this work, because it is perceived that companies are striving to modify

their HR areas on most issues that indicate changes in a strategic role. In the literature review, it was reported the phases of management and the evolution attributed to HRM over time.

Along with the phases of the management, it was observed that HR policies and practices area are also progressing, which continue providing adaptations to the best strategic decisions in front of the organizational challenges. On the Internal Marketing side, it was explained how much IM is linked to HRM and what strategies have been used in his favour. In order to meet the general objective of this work, the information and results obtained from the research were used to identify and describe the fact that commercial companies appear to have strategic initiatives for employee involvement, human capital as obtaining for competitive advantage and intellectual's management, indicating a concern from this companies to continuously improve their HRMP, since the prominence that this area has for the competitive advantage of the companies. With all this, the main objective is to increase employee's retention. However, the researcher treated data that still applies until now.

Lastly, the moment when the researcher interviewed former colleagues. By knowing already, the business, it may affect sometimes the transparency and clearness. It was interesting to listen the answers to the different subjects and surprisingly match or disrupt the ideas pre-made. It is suggested that future research should seek to not only understand employee characteristics in relation to organizational change efforts in further detail, for example, the extrinsic and intrinsic motivators but also seek to place these in terms of organizational and geographic cultural context sector in other fields besides telecommunications. The researcher emphasize the extreme importance of this study complemented with: Internet of Things and Human Resources Management; 4.0 Industry; 5.0 Industry.

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Part V
Gamification Technologies to Marketing

Chapter 16
Gamification of Mobile Applications as a Tool for Optimising the Experience of Museums

Liliana Câmara and Ana Pinto de Lima

Abstract Museums occupy a vital place in society, as they play an important role in preserving and contributing to a unique cultural learning environment for their visitors. There has been a new trend in combining digital tools with non-digital resources. This article pursues to offer a contribution in the area of museums and aims to study the application of gamification in order to add value to the experience through a mobile application. Gamification arises in an attempt to respond to the current need to evolve the user experience and make it more engaging. Various game design elements are used in this process, so it is essential to be able to identify how to adapt gamification to the target audience in order to meet the company's goals and user satisfaction. The Gamification Scale was applied according to the Gamification User Types Hexad framework (Tondello et al., The Gamification User Types Hexad Scale, 229–243, 2016). Through the application of a questionnaire (200 respondents), it is possible to identify the predominant typology of the target audience and create a gamified system. The study concluded that the generation millennials present a tendency to try to incorporate their smartphones in the interaction with museums. Furthermore, it is essential to prioritise the integration of game elements belonging to the Philanthropist typology, due to its greater representation in the target audience.

16.1 Introduction

Museums occupy an important place in today's society, not only as administrators of cultural objects of value, but also preserving and contributing to a unique cultural learning environment for their visitors. This notion is also confirmed by the official definition of the International Council Of Museums, which emphasises the importance of the role of museums in acquiring, conserving, investigating, communicating

L. Câmara · A. P. de Lima (✉)
CEOS.PP, ISCAP, Polytechnic of Porto, Porto, Portugal
e-mail: analima@iscap.ipp.pt

L. Câmara
e-mail: liliana.lema.camara@gmail.com

and exposing the material and immaterial heritage of humanity and its surroundings for educational purposes. Learning occurs when there is an involvement with the exhibitions, and they present the information in a way that appeals to the interest of the visitors. According to the National Statistics Institute, there were 430 museums in Portugal in 2017, which had 17.2 million visitors, an increase of 10.6% over the previous year. However, it is essential to note that although the number of visits has been increasing, this is mainly due to an increase in foreign visitors as well. Additionally, although the number of visitors continues to increase, the percentage of growth has been decreasing by 3% per year. Gamification does not have a globally accepted definition by all authors; however, its characteristics always tend to be similar. The most accepted definition is from Deterding et al. [4] in which gamification is defined as the use of some elements of games and placed in another context to create a gameplay experience and increase the engagement. Gamification involves the use of methodologies and elements of games, without changing their original purpose, and thus creating new means of relationships between customers and partners in order to lead to greater collaboration, loyalty and satisfaction. However, it should not be assumed that the gamification method is simple and direct. There is a long process of analysing variables and conditioning of the context of action to which gamification needs to be applied, in order to achieve the proposed objectives [1, 25]. The focus of this study is gamification in museums and their use as a way to add value to the experience of visiting a museum through a mobile application.

16.2 Literature Review and Research Questions

16.2.1 Gamification

The most accepted definition of gamification in the scientific community is from the authors Deterding et al. [4] who define it as an informal generic term for the use of video game elements in non-game systems, and with the aim of improving the user experience and engagement. The origin of the term gamification was first documented in 2002 by Nick Pellin, referring to the use of a user interface design similar to a game in order to make electronic transactions faster and more pleasant [2]. Gamification can have a positive impact in several areas, namely it can help marketing obtain benefits that are difficult to achieve with the use of current marketing tools. It is a very useful tool for engaging, motivating, activating customer behaviour and creating loyalty [4]. It can be easily applied in a business context, with the main objective of providing the company with a profitable result and the consumer with an individual experience [6, 15].

Games—During the process of developing gamified applications, several elements of game design are applied, so it is essential to first understand the definition of what a game is. Ferrara [5] defines that games have three components: objectives,

environmental constraints and formal constraints. The objective is a specific condition or set of conditions that all players seek to achieve or maintain. Environmental constraints are physical characteristics that limit what the game's characters can and cannot do. Finally, formal constraints limit what players can and cannot do in accordance with mutual rules and agreements. Deterding et al. [4] simplified its definition in relation to the previous authors and says that the word "game" has a meaning characterised by certain rules, where there is a competition of individuals to achieve certain specific results or goals.

Players—All games need players, and these individuals are an important part of the development of a system with gamification. However, it is essential to keep in mind that not all players are equal [3, 14].

Hexad Typology

Marczewski [9] proposed a model with six types of users that differ in relation to the degree to which they can be motivated by intrinsic or extrinsic motivational factors. Rather than basing the model on observed behaviour, the types of users created are personifications of people's intrinsic and extrinsic motivations, as defined by the Self-Determination Theory [11]. Thus, the four types of intrinsic motivation in the Hexad model are derived from the three types of intrinsic motivation in SDT, namely autonomy, competence and relatedness, with the addition of purpose [13]. This model is shown in Fig. 16.1. The six types presented by Marczewski [8] are: Philanthropist: they are motivated by purpose, altruistic and are willing to give without expecting a reward; Socialiser: motivated by relationships, they want to interact with others and establish social connections; Free Spirit: they are motivated by autonomy, that is, having the freedom to express themselves and act without external control. They like to create and explore within a system; Achiever: motivated by competence, they are players who seek progress within a

Fig. 16.1 Marczweski's Hexad model [13]

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system through completing tasks or overcoming challenges; Player: are motivated by external rewards and do whatever is necessary to achieve the rewards, regardless of the type of activity; Disruptor: are motivated by triggering change. These tend to act in a way to disrupt the system, directly or through third parties, in order to force changes, both positive and negative.

As mentioned earlier, four of the six types of players defined by Marczewski [9] are based on the personifications of four intrinsic motivations: Socialiser is based on the relationship, Free Spirit on autonomy, Achiever on competence and Philanthropist on purpose. To standardise the procedure for defining the type of player according to the Hexad model, Tondello et al. [13] developed a scale composed of 24 questions, which seek to describe a user's preferences at their psychological level. During the study, it was also confirmed that there was a positive correlation between the type of user and the design elements proposed by Marczweski [15, 22]. Thus, the Hexad scale can be a useful tool to determine the main motivations of a user, which is why the scale was also used in this study.

Game Elements

This study opts for the game elements proposed by Marczewski [9] that focus more on gamification. The author divides the game elements into 8 types, with 6 corresponding to the typologies presented in the previous point of the Hexad model, as well as general and scheduled game elements. The general game elements presented by Marczewski [9] are: Tutorials, Signposting, Loss Aversion, Progress/Feedback, Themes, Narrative/story, Curiosity/Mystery Box, Time pressure, Scarcity, Strategy, Flow, Consequences, Investment. In addition to presenting several game elements that apply to all types of player, Marczewski [9] indicated that there are certain game elements that must be applied to certain types of player, as they relate to the intrinsic and extrinsic motivations mentioned different and specific, as indicated in the previous point. The game elements for each type of player in the Hexad model [9] are shown below:

Philanthropist—Meaning/Purpose: assign meaning or purpose to actions; Caretaking: creation of roles of administrators, moderators and curators in order to allow users to assume a parental role; Accessibility: access to more resources and skills in a system can offer people more ways to help others and contribute. It also helps to make them feel valued; Collect/Trade: to allow the collection and exchange of items, which enhances the construction of relationships and feelings of purpose and value; Gift/Share: allow giving gifts or sharing items with other individuals. It can be seen as a form of altruism, in which the potential for reciprocity can be a strong motivator; Sharing knowledge: allowing knowledge sharing with other individuals, the ability to answer questions and teach others.

Socialiser—Teams: possibility to join teams, encouraging collaboration, but also competition between teams. Small groups can be much more effective than large groups; Social Network: allowing people to connect and be social through the use of an accessible and easy-to-use social network; Social Status: greater visibility for the players, creating opportunities to create new relationships, but also simply making them feel good. Feedback mechanisms, such as leader boards or certificates, can be used; Social Discovery: mechanism of finding people and being found is essential

to build new relationships. Matching people based on interests and status can help players take the initiative; Social Pressure: Humans don't like to feel that they are different. In a social setting, this can be used to encourage them to follow their friends' behaviours. However, it can also demotivate if expectations are unrealistic; Competition: giving players the chance to prove themselves to others. It can be a way to earn rewards, but it can also be a place where new friendships and relationships originate.

Free spirit—Exploration: giving players more space to move around and explore. In the creation of a virtual world, the more distant the limits, the greater the propensity to explore; Branching Choices: allowing players to choose their paths and destinations; Easter Eggs: unexpected surprises that players can find. Players know that these exist; however, they are difficult to find; Unlockable/Rare content: offer of unlockable or rare content that normally is a consequence of the discovery of Easter Eggs or extraordinary feats; Creativity tools: allowing players to create their own content and express themselves, either for pleasure or to help others (such as creating tutorials, FAQs, etc.); Customisation: tools to customise the experience, from avatars to the gamification environment itself. It allows you to control how you present yourself to others.

Achiever—Challenges: seeks to help keep individuals interested, testing their knowledge and allowing them to apply it. Overcoming challenges makes players feel they have achieved something; Certificates: physical symbol of mastery and achievement, which also serve as status; Learning/New skills: possibility to learn and progress, seeking to achieve complete mastery; Quests: fixed goal that must be achieved, often made up of a series of connected challenges, multiplying the feeling of accomplishment; Levels / Progression: allows you to track the progression of players in a system. It is important for the player to visualise where he is, what he has achieved and what he can still achieve; Boss Battles: signal the end of a journey and the beginning of a new one. These are milestones that give the opportunity to demonstrate new skills and the level of mastery.

Player—Points / Experience Points: feedback mechanisms, which allow you to monitor progress, as well as being a mechanism to unlock new items, awards based on achievements or desired behaviours; Physical rewards/prizes: promoting activity and, when used correctly, can also lead to engagement; Leader boards: applied to show players how they compare to others; Badges/Achievements: feedback mechanism, which should be used in a prudent and meaningful way to make it more desired; Virtual Economy: allow players to spend a virtual currency on real or virtual goods. However, it is necessary to take into account the legality of this type of system and the associated financial costs; Lottery / Game of Chance: mechanism to win rewards with little effort from users.

Disruptor—Innovation Platform: allowing players to intervene in the system and generate major innovations; Voting: possibility to give your opinion and be heard; Development tools: allow players to develop new add-ons to improve and develop the system; Anonymity: encouraging the player's freedom within the system and the lack of inhibitions. However, anonymity can reveal both the best and the worst of

people; Light Touch: encourage disruption and apply the rules with a "light touch"; Anarchy: creating events without rules to see how users react.

16.3 Methodology

A quantitative methodology was conducted, using a questionnaire survey based on the methodological model presented by Tondello et al. [13] the Gamification User Types Hexad Scale. This scale is composed of 24 statements using a 7-point Likert scale, in order to indicate their level of agreement, and thus allow to discover which is the predominant typology of the user within the six types presented by Marczewski [9, 13]. The three relevant research questions were defined:

RQ1—How does a smartphone user interact with a museum?

Since the smartphone is a key element in the daily lives of the Portuguese, it will certainly accompany the visitor during their interaction with a museum. However, the device can also be seen as a distraction, so it is essential that the museum uses the smartphone as an advantage for the experience.

RQ2—What strategies can be created so that the visitors' experience is improved by creating a gamified mobile application in the context of museums?

The goal of creating a mobile application should always be to improve the visitor experience [7]. However, it is necessary to identify how an effective strategy can be created to respond to its needs in order to avoid the failure of the application, as has been the case for many museums in Portugal.

RQ3—How can these strategies be translated into a national context?

Once an effective strategy has been found, it is necessary to understand how it can be applied to Portuguese museums, offering an empirical basis that allows the future development of an application with a better experience for the visitor/user.

A questionnaire was developed with the following sections: Sociodemographic data; Museum data; Mobile museum applications; User Types Hexad Scale questions [13] and Game Elements [9, 13]. Sampling was non-probabilistic for convenience, as members of the population are conveniently available to provide information and respond to the survey [12]. The survey was disseminated through the social network Facebook, and the data collected through the survey on Google Forms.

16.4 Analysis and Results

The survey registered a total of 203 participations, of which only 200 were relevant, as they met the initial selection criteria of being individuals aged 18 or over, residing on national territory and having already visited a museum. In terms of gender, there was a prevalence of female participants, with 61.5% of responses. Thus, young adults predominate with a total of 77.5%, more than two-thirds of the total of participants. Regarding the degree of qualifications, participants with a degree clearly prevail,

representing a total of 43.5%, followed by secondary education and master's degree very close to each other, with 26.5% and 25%, respectively. Museum attendance habits and the use of digital technologies by museum participants were also analysed to understand how the target audience relates to museums, as shown in Table 16.1. The last visit to a museum was surveyed, the annual visits on average, and the use of smartphones on these visits. It appears that the majority of participants attended a museum in the last 6 months, with a figure of 37% of respondents. For 23.5% of participants, the last visit is more than a year old, followed by 20.5% who attended a museum in the last month. As for the average number of visits over a year, "1 to 3" predominated, with a total of 69.5% of responses, followed by "4 to 6" with a total of 19%. The use of smartphones during visits to museums divided the respondents, prevailing, however, that 53% of users currently do not use their smartphone to interact with the museum.

It was found that 66 of the users indicate that they use a smartphone to search for more information about art and/or exhibitions. In turn, 46 mention using a smartphone to share the visit (or elements of it) on social networks, followed by 25 who use a smartphone to view a map of the museum, 22 participants mention reading QR codes positioned in the museum and 5 participants used the option to manually insert their alternative uses. Within these 5, the use of the smartphone to photograph the museum was mentioned three times, once looking for mobile applications from museums and, finally, once using the smartphone for audio guide. The indications for using the validated scale of Tondello et al. [13] previously discussed, were followed,

Table 16.1 Global sample data

	Frequency	Percentage (%)
Last visit to a museum		
In the last week	15	7.5
In the last month	41	20.5
In the last 6 months	74	37
In the last 12 months	23	11.5
More than 1 yr ago	47	23.5
Total	200	100
Annual visits on average		
1 to 3	139	69.5
4 to 6	38	19
7 to 9	11	5.5
10 and more	12	6
Total	**200**	100
Use of smartphone		
Yes	94	47
No	106	53
Total	200	100

and the answers were given through a 7-point Likert scale, where "1" meant that the participant totally disagreed with the statement and "7" means that he fully agreed. For all users, the value of the four statements was summed up, the same being done for all types. The one with the highest value was identified as the predominant typology of the user, according to Table 16.2.

Thus, it was possible to verify that the predominant user typology is Philanthropist, corresponding to 43.5% of the participants. This value is followed by the Free Spirit with 25% and Achiever with 15.5%.

In the game elements section, the participant was asked to evaluate on a Likert scale from 1 to 7 how much each game element motivated him. The evaluation was favourable for all elements, with the lowest value being to collect and exchange it, which belongs to the philanthropic user typology. The elements most favourably

Table 16.2 Mean, median and sum of questions of the Gamification user types hexad scale

		N				
		Valid	Omitted	Mean	Median	Sum
Philanthropist	P1	200	0	6.05	6	1210
	P2	200	0	5.61	6	1122
	P3	200	0	5.85	6	1169
	P4	200	0	6.00	6	1199
Socialiser	S1	200	0	5.09	6	1017
	S2	200	0	5.28	6	1055
	S3	200	0	5.36	6	1072
	S4	200	0	5.15	6	1030
Free Spirit	F1	200	0	5.71	6	1142
	F2	200	0	5.82	6	1164
	F3	200	0	5.97	6	1194
	F4	200	0	5.87	6	1174
Achiever	A1	200	0	5.78	6	1156
	A2	200	0	5.91	6	1182
	A3	200	0	5.56	6	1112
	A4	200	0	5.65	6	1130
Disruptor	D1	200	0	3.82	4	764
	D2	200	0	5.44	6	1088
	D3	200	0	3.64	4	728
	D4	200	0	3.65	3	730
Player	R1	200	0	4.95	5	990
	R2	200	0	5.26	5	1052
	R3	200	0	5.66	6	1131
	R4	200	0	5.43	6	1085
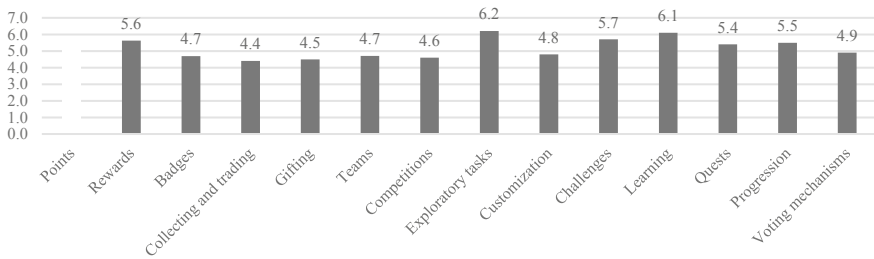
Fig. 16.2 Analysis of the motivation of the game elements

evaluated were the exploration options, with an average of 6.2, related to the free
spirit user typology; learning with an average of 6.1, and challenges with 5.7, both
linked to the user type of Achiever, as shown in Fig. 16.2.

When analysing the use of the smartphone in museum environments, it was found
that young adults, although also divided, the majority responded that they use the
mobile phone, with 51%, that is, in this case, the age limitation influences the data. As
for the typology, the predominant user typology of the general public, Philanthropist,
remained with 38.7%. However, it was found that there is a greater variation in user
typology among young adults, with the user typology in second place, Free Spirit,
being much closer, with 28.4%, a difference of 10.3% (while this difference in the
global sample is 18.5%).

16.5 Discussion of Results

After analysing the data, together with the literature review, it is possible to answer
the research questions, in order to create an empirical basis to be applied by museums
in the development of their own mobile applications.

RQ1: How does a smartphone user interact with a museum?

The data indicated that most participants do not use their smartphones to improve
their experiences with museums, despite the fact that this inclination changes among
young adults who are slightly more favourable to the use of devices in the context of
museums. It is natural that a museum has physical limitations in terms of the infor-
mation it displays, focusing on the most basic in order to create a harmonious space.
However, the opportunity to personalise (and consequently improve) the experience
is missed, since different visitors may present different points of interest. Museums,
due to their nature, always maintain a connection to the physical space, but there
has been a growing tendency to combine the traditional museum with new digital
technologies. Thus, in an art museum, while a visitor may be more interested in the
history of a work of art, another may want to know more about the artistic technique
or the artist's history. As such, the smartphone has become an educator for users,
and most of the participants in the study who revealed that they use the smartphone

during the visit, indicated that they use it to search for more information about the exhibitions and art. Mobile devices provide easy, immediate and relevant access to the museum, taking the museum to new audiences and/or providing different experiences from the most common ones and, consequently, keeping the visitor interested. Humans being social beings, and social networks taking such an important place in the lives of individuals, it is understandable that the second most suitable reason for using smartphones is to share on social networks. This point can be explored by museums as an opportunity to promote their space for free. Only 22 of the respondents who use smartphones in museums mentioned the reading of QR codes, being one of the elements where gamification can act, in order to promote behaviour change and encourage the use of modernisation elements in which the museum has invested in the past.

RQ2: What strategies can be created so that the visitors' experience is improved by creating a gamified mobile application in the context of museums?

Rodley [10] defends the use of mobile devices in museums because he believes that they have potentials beyond what other interpretive means can offer, such as enabling easy, immediate and relevant access to the museum, reaching a wider audience, and providing experiences in order to keep the user interested. However, it can not only represent an increase in satisfaction, but can also promote the return to museums that have been visited in the past. The empirical results analysed in the literary review showed that personalised approaches can potentially achieve better results than generic approaches. However, the study of personalised gamification is recent, which is why the existing studies are theoretical, focusing on the identification of different personality traits or personalisation preferences. Tondello et al. [13] tested the correlation of each type of Hexad user with various game elements proposed by Marczewski [8], also creating a scale that seeks to understand the user's psychology and, thus, allow engineers to analyse their target audience, in order to customise and choose the most suitable game elements. Since the goal is to create a basis to be applied in the future by museums, it is crucial to apply this validated scale for us to provide a more in-depth knowledge of our users.

RQ3: How can these strategies be translated into a national context?

Few Portuguese museums currently offer a mobile application, and it was possible to verify that most of these are limiting and are not directly involved in the user's experience, but mostly serve as audio guides. The offer of a gamified mobile application presents itself as an asset for the museum, and the present study aims to offer a basis for museums in the future to apply the knowledge obtained. It was essential to analyse the general population, aged 18 and over, residing in Portugal and who have already visited a museum, as these represent the potential visitors that the museum intends to capture, both to visit the museum for the first time, and to encourage return. However, since the adoption of new technologies is more prevalent among the younger population, confirmed by the use of their smartphones during museum visits, it was also essential to recognise whether there are some distortions of results due to the inclusion of a larger number of samples. Thus, it was possible to verify that the answers were always similar, and that is why we can conclude that our target audience in a museum context is predominantly Philanthropist, according

to the Hexad user type model. However, it is necessary to note that the typologies presented more varied results when only young adults were analysed, so it is recommended the possible inclusion of Free Spirit game elements, a user typology that represents the second place in both cases. Once knowledge of the user's psychology is collected and the predominant user typology, Philanthropist, is identified, it is fundamental to identify the associated game elements.

The various game elements validated the following for philanthropists [9, 13]: Collect/Trade: Allows you to collect and exchange items, which enhances the building of relationships and feelings of purpose and value; Gift/Share: Allow to gift or share items with other individuals. It can be seen as a form of altruism, where the potential for reciprocity can be a strong motivator; Sharing knowledge: Sharing knowledge with other individuals, the ability to answer questions and teach others; Care-taking: Incentive to create roles of administrators, moderators and curators in order to allow users to assume a parental role. These elements, whenever possible, should be integrated into the mobile application gamified by the museum. It is essential to note that although they are all equally important, each system must be adapted to the needs of the institution. This means that an application can end up containing only one element or all. However, since the user typology of Free Spirit also has a large representation among the target audience, it was also considered vital to discuss its elements for implementation in a future gamified mobile application. The game elements correlated with the Free Spirit typology [13] were: Exploration: Give users more space to move and explore. In the creation of a virtual world, the more distant the limits, the greater the propensity to explore; Branching Choices: Allow users to choose their paths and destinations; Easter Eggs: Unexpected surprises that users may encounter. These know that they exist; however, these are difficult to find; Unlockable / Rare content: Offer of content, unlockable or rare, which are usually a consequence of the discovery of Easter Eggs or extraordinary feats; Creativity tools: Allow users to create their own content and express themselves, either for pleasure or to help others (such as creating tutorials, FAQs); Customisation: Tools to customise the experience, both from avatars to the gamification environment itself. It allows you to control how you present yourself to others. As previously mentioned, these elements must be selected in accordance with the museum and its objectives. However, it is crucial that priority be given to the integration of game elements of the Philanthropist user typology, as they represent a larger number of the target audience. It is also important that the museum recognises that the gamified mobile application seeks to become a complement to the experience, and these elements must be integrated in such a way that they support and better the real user experience. They should attach themselves to the existing modernisation efforts of the museums and not be seen as an alternative. For example, in an attempt to integrate the element of collecting items, this can be achieved through the collection of existing QR code readings. It is also worth noting that since gamification promotes behavioural change, museums can also use these as a means of guiding visitors in order to offer an experience more in line with the museum's objectives. Using the previous example, the gamification of collecting QR codes can lead visitors to experience the museum through a predefined route or attract attention to certain objects/places in the museum. Although not all game

elements were included, those that could most easily be applied in the context of a mobile application for museums were selected and the study participants were asked about their levels of motivation in relation to the various game elements, in a Likert scale from 1 to 7. There was a discrepancy between the majority typology and the motivation assessments of the elements of the game, as both elements linked to the Philanthropists have the lowest motivation means: collect and exchange with 4.4 and offer with 4.5. However, it is important to note that the study of Tondello et al. [13] mentions that the main objective of the scale is to understand more about the user's psychology in a gamified context and not to get to know the preferences in terms of game elements. Not all users are necessarily players and, therefore, may not be aware of their game preferences, as well as not being familiar with the vocabulary of game design, which may influence the values that have been verified. Conversely, it was possible to verify that the most favourably evaluated game element was the exploration that is part of the Free Spirit typology, which was established as a typology that should also be considered when creating a gamified mobile application for museums. Therefore, it is considered that exploration is a very favourable element and that it can positively influence the user's experience; therefore, maximum importance should be given.

16.6 Discussion and Conclusion

Although the concept of the museum continues to maintain a strong connection with the physical space, there has been a new trend in combining this traditional notion with new technologies. The study allowed us to conclude that the generation of current young adults, who fit in the millennial generation, present trends towards the attempt to incorporate their smartphones in the interaction that they have with museums. As a solution arises gamification, which is defined by the insertion of game elements in non-game contexts. However, it is important to remember that each gamified system is unique and has different goals and needs. These game elements have different uses and the correct ones to be applied to better achieve the institution's objective should be studied. The authors Tondello et al. [13] created the Gamification User Types Hexad Scale that seeks to help mobile application engineers and designers to analyse their target audience and thus identify the game elements that should be integrated to better respond to the organisation's goals. During the analysis of the data, consideration was also given to the game elements of the Free Spirit user typology, since it presented the second largest representation in the sample. However, as previously mentioned, these elements must be selected in accordance with the museum and its objectives, and it is essential that priority be given to the integration of game elements of the Philanthropist user typology. Museums point to the scarcity of resources as an obstacle to the implementation of digital technologies, often leading to the implementation of basic mobile applications simply as a way of showing that they have them, without due investment in strategic studies. This study seeks to

contribute to overcoming this gap and to create an empirical base that will allow museums to have a future application of the knowledge of their target audience.

16.7   Limitations and Future Studies

Despite the efforts made to achieve the initially defined objectives, the present study also faced limitations. The data presented by the Instituto Nacional de Estatística referred to the year 2017, not yet presenting data for 2018. The data collection faced limitations, namely its size. However, the total sample was 200 respondents, which may represent a small number for data validation. In recent years, gamification has moved from a new term of investigation to a thriving multidisciplinary field. There are still many challenges and open questions about gamification. The study should be seen as a strategic study that analyses the target audience offering an empirical basis for the future development of a museum mobile application. A mobile application must be intuitive and involve the user in order to improve the experience, so the study allowed to identify the most important game elements to be considered.

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Part VI
Marketing Automation and Marketing Inbound

Chapter 17
Expanding Digital Marketing Campaigns With Machine Learning Built Lookalike Audiences Having Varying Prior User Characteristics

Venkata Duvvuri

Abstract Finding the right audience, also known as targeting, is a key exercise in many digital campaigns. Enterprise marketing applications (EMA) like Oracle CX provide filtering and querying capabilities to allow marketer initiated targeting in such campaigns. While such mechanisms are driven by marketer's intuition, EMAs include certain out of box approaches such as behavioral (re)targeting to further automate audience targeting. We propose a new unsupervised machine learning-driven audience selection approach using lookalike technology build on top of such seed audience targeting. Specifically, we propose a segment-segment similarity audience lookalike mechanism to expand digital campaigns in multi-tenant EMAs where user characteristics vary per enterprise account. Additionally, our approach is a hybrid approach compared to existing methods lightening up training computations and speeding up lookalike inferences. We demonstrate with experimentation that this delivers 8–17% closer matches than statistical benchmark methods.

17.1 Introduction

Enterprise marketing applications [1] have evolved from performing basic marketing automation tasks like designing and sending campaigns to leveraging machine learning to automate marketing processes in such applications. Machine learning is increasingly leveraged for targeting users for specific campaigns. While targeting in general is a fairly query intense process, marketers have prior intuition of user features (a.k.a attributes) or characteristics important for their campaigns. This intuition can be expanded fairly easily by so-called audience extension or lookalike methods 845970:19942834, [2–4]. These methods expand an existing audience, created by intuition or observed behavioral performance, etc. They free the marketer

V. Duvvuri (✉)

Department of Technology Leadership and Innovation, Purdue University, West Lafayette, IN, USA

e-mail: vduvvur@purdue.edu

Oracle Corp, Santa Clara, USA

from the burden of examining myriad of user features or characteristics to determine more audience. As such targeting becomes fruitful exercise by following up intuition or experience with machine learning-driven lookalike expansions.

Enterprise marketing applications (EMAs) have another caveat to lookalike technologies adoption. Normally, user characteristics are known ahead of time or derived from a fixed set of features. But enterprise marketing applications are multi-tenant [5]. This means the application hosts several enterprises with varying sets of user characteristics. Normally, these user characteristics differ significantly as the enterprises may be from retail, airline, insurance, automotive, etc. As such there may no common characteristics so that existing lookalikes methods could be readily adopted.

Another interesting caveat in enterprise marketing applications is that without lookalikes or similar techniques marketers generally under market the campaign by selecting only a few known candidates. While they design the initial target list with the best intentions, these generally do not cover all possible candidates from their entire user base. With machine learning, several more users can be added with little effort without looking elsewhere, like from general pool or a third party. Though, in a few digital marketing channels like social media, lookalike technologies can fetch users from a general pool of users like in [4], but in permission-based marketing [6], there is enough un-marketed users within a particular tenancy (or account) that can still be reached to expand the given campaign. Due to legal limitations of permission-based marketing, in general, it is difficult to explore users from a general pool of other tenants in a multi- tenant EMA, but still, there is enough meat within the tenancy. But, still, the problem to be addressed is still how to deal with varying user characteristics for the various tenants in EMAs.

The paper is organized as follows: Sect. 17.2 discusses prior work, Sect. 17.3 highlights problem statement, Sect. 17.4 provides an overview of a novel clustering-based machine learning lookalike model (DYNPRO_CLUST_LOOKLALIKE) when user characteristics are unknown in a multi-tenant environment, Sect. 17.5 presents experimentation and results for this approach when applied to real enterprise marketing datasets, Sect. 17.6 presents the pros and cons of this approach and finally Sect. 17.7 concludes the paper with future research directions. Table 17.1 reflects the nomenclature used in this paper.

17.2   Prior Work

Digital marketing audience needs have grown and lookalike technologies [1, 2, 4, 7] proved that it is easier to use such a method to expand audiences without digging deeper into the audience features. We concur with [2] that three primary methods for lookalikes are: (a) similarity-based, (2) regression-based, (3) segment approximation-based.

Qu et al. [1] explored regression-based mechanisms where logistic regression models assign probabilities for scoring each user to be included in the seed segment,

Table 17.1 Nomenclature

Term	Description
Cs	Seed campaign
OR	Open rate
CR	Click rate
DYNPRO_CLUST_LOOKLALIKE	Dynamic profile cluster lookalike model
Oracle CX	Oracle customer experience applications suite
EMA	Enterprise marketing applications
Q*	Lookalike users
P	Entire users universe in enterprise
S	Seed list
C	Candidate lookalike users
n	Size of lookalikes

whose member users act as positive examples. While this technique is more computationally performant it has to be replicated for every seed during the inference process and calculation of a new seed's lookalike can take time.

Shen et al. [7] devised a segment approach where the overlap of seed segment with several pre-built segments is established and lookalike audiences are drawn from those overlapping pre-built segments. This is computationally less expensive. We draw inspiration from this method but do away with pre-built segmentation needs. We derive our segmentation on the fly and build the segment (a.k.a list) level feature vectors and compute segment-segment similarities.

Ma et. al. [2] have used a user-user similarity in a nearest neighbor technique for building lookalikes. The pitfall of similarity approach is that it is computationally intense in calculating user-user similarities over a vast set of user pairs. Additionally, Ma [2] has devised further optimization, pruning and prioritization techniques based on a feature important space. While our approach partly falls in this category, we use segment-segment similarities instead of user-user similarities. This is primarily due to the fact that we also leverage a segment level aggregation approach and a so-called hybrid mechanism that combines similarity and segmentation approaches in our model.

Liu et al. [4] has devised an unsupervised mechanism where the lookalikes are based on expended profile attributes that are generated via an inhouse profile recommender. While this is a category generalization approach, it is not amenable in a multi-tenant EMA where the tenancy attributes are not rich enough to be expanded. Additionally, they have married the categorization with profile similarity enhancements, but this needs richer profiles.

In general, [1, 2, 4, 7] assumes a constant prior known features or characteristics for their user base. This does not bode well in multi-tenant digital marketing applications where every enterprise customer can have its own rich set of features, quite different from the next enterprise customer, all using the same digital marketing

application. Thus, we device a generic pre-processing and feature engineering technique to standardize the unknown user characteristics for each tenant in an enterprise marketing application and then proceed with our hybrid segment-oriented lookalike approach (DYNPRO_CLUST_LOOKLALIKE_MODEL).

17.3 Problem Statement

We define lookalike problem as follows: Given a S and P and n where:

I. Seed list, S: a marketer-specified list of users that is a target list for some campaign and is a subset of the profile list P,
II. Profile list, P: a set of users where some of the users in the list are an audience for some campaign(s) (should not all be coming from the same campaign), and users who are in an audience have some behavior of interest (clicks, conversions, sends, opens, etc.),
III. Number of lookalikes, n: number of people we want to get that are similar to our seed list based on some common traits or behaviors,

We define choice of performance metric M as:

I. Choice of one metric that measures the seed list for which we will get lookalikes for (e.g.: open rate, click rate, conversion rate, etc.),
II. Some campaign Cs that targets the seed list,

We develop an lookalike algorithm that gets a list of users that is,

(a) Similar to the seed list with respect to a given performance metric,
(b) Targeted by campaigns that are similar to the campaign of the seed list, and,
(c) Is not included in the original seed list. These new users are what we call the lookalikes to our seed list.

We formalize the above requirement for lookalike $Q*$ as:
Given a profile list P, seed list S, and an integer n, find a subset $Q* \subseteq P - S$ such that,

1. The cardinality of $Q*$ is n if $|P - S| \geq n$ and $< n$ otherwise,
2. And as the correctness criterion,

$\operatorname{perf}(Q* \cap \operatorname{aud}(Cj)) \geq \operatorname{perf}(S \cap \operatorname{aud}(Cj)) - \epsilon.$
for all Cj $\operatorname{perf}(Q* \cap \operatorname{aud}(Cj)) \geq \operatorname{perf}(S \cap \operatorname{aud}(Cj)) - \epsilon$ for a threshold ϵ where:

(a) For all Ci where Ci targets S and
(b) For all Cj where Cj targets $(S \cup Q*)$, $\operatorname{sim}(Ci, Cj) > \delta$ for some campaign-specific similarity measure sim and threshold δ
(c) And the performance metric perf where $\operatorname{perf}(Q* \cap \operatorname{aud}(Cj))$ is a function that calculates performance of the subset of $Q*$ intersecting with the audience of campaign Cj (defined as $\operatorname{aud}(Cj)$).

17.4 Dynamic Profile Cluster Lookalike Model (DYNPRO_CLUST_LOOKALIKE_MODEL

17.4.1 Summary

Our approach is to reduce the complexity of the user-user similarity-based approach by hashing (clustering) the users into buckets based on important or reduced features and then find similarities between feature vectors at a bucket level rather than at user level. Here, the entire profile user set (P) is hashed (clustered) into buckets.

Once we know the buckets (clusters) for candidate users (C), we can find the closest buckets to seed users based on similarities on aggregate features of both candidate and seed audiences. This is a slight modification of the approach suggested in [8]. Their approach is based on similarity as well but is computationally intense. Ours is divided into three phases:

Phase 1: Identify important features (from an initial set of features) based on predictive feature selection and reduction methods.

Phase 2: Allocate the entire user sets (profile lists) into buckets based on above-reduced features.

Phase 3: Compute the aggregate behaviors (or vectors) of the transformed features for each bucket and the seed. Then, identify similar buckets to the seed. As a result, the performance of the lookalikes is similar to the performance of the seed and is optimality as follows:

I. Operating at bucket level for similarities rather than user level similarities.
II. Performing prior feature selection and reduction based on feature importance methods right at the beginning for each tenant enterprise in a multiple tenant application. Note, the features are varying per account and hence no uniformity at the beginning of training for each enterprise.
III. Leveraging the aggregated bucket vector by using averages, etc., of the feature vectors of each user in each bucket.

The DYNPRO_CLUST_LOOKALIKE_MODEL model is detailed below:

1. Identify important features using feature selection methods for an account.
2. Build standards representation of seed audience (and candidate audience) using feature compression/decomposition techniques (like NMF and SVD). This gives a D dimension feature representation for each user (in both the seed list and entire list).
3. Bucketize entire list of users into K buckets based on above D dimension features using clustering (a form of hashing).
4. Aggregate (mean) standard features representation of both seed list and candidate clusters (buckets) to get K (clusters) + 1 (seed) vectors of features of D dimensions.
5. Build similarities between K buckets(clusters) and seed list vectors (this is where this method differs and simplifies computation) using similarity measures (cosine, jaccard, etc.)

6. Rank clusters according to similarity measures.
7. Use top clusters to generate lookalikes (after removing the seed users from these buckets to generate the lookalikes).

17.4.2 Intuitive Proof

Proof: perf(Q^*) perf(S) − ε (for Cs and Cj where sim(Cs, Cj) > δ).

If you choose features (A^*) of S and Q^* such that they completely determine the performance of S and Q^* on generic Campaign C. (Campaign C is said to be "generic" if the subset of important attributes (A^*) selected based on C performance predicts the performance on every campaign Ci in enterprise within a small delta).

Note: We select important features (A^*) on behaviors on a "union of all campaigns" that acts as a proxy of a "generic" campaign.

This implies these attributes (A^*) of S and Q^* completely determine the performance of S and Q^* on a targeted Campaign Cs.

Hence, if Attributes(Q^*) similar to Attributes(S) then perf(Q^*) is similar to perf(S) for Cs.

Hence, for a given Cs,

perf(Q^*)^{Cs} = perf(S)^{Cs} ± ϵ.

perf(Q^*)^{Cs} > = perf(S)^{Cs} − ϵ.

Hence, for any Cj (as in Cj is similar to Cs where sim(Cs, Cj) > δ).

perf(Q^*)^{Cj} > = perf(S)^{Cj} − ϵ.

17.4.3 Model Workflow (DYNPRO_CLUST_LOOKALIKE_MODEL

In Fig. 17.1, we show the workflow of the model. First, we perform feature extraction/importance step from a list of arbitrary or dynamic features per enterprise or account. We leverage ExtraTrees regressor method to derive feature importance [8] over unknown features for each enterprise. This is then fed to a feature reduction or compression step and translated into standardized features vectors per user using non-matrix factorization [9], etc. All the users in profile P are then clustered using k-means or similar unsupervised techniques. We aggregate these vectors per cluster. We repeat similar aggregation and get a vector for seed. We perform cosine similarities between seed and identify top clusters. We then pull the lookalike from these top clusters. For each cluster, if there are too many, we randomly choose to match the lookalike size.

Fig. 17.1 DYNPRO_CLUST_LOOKALIKE_MO[
workflow
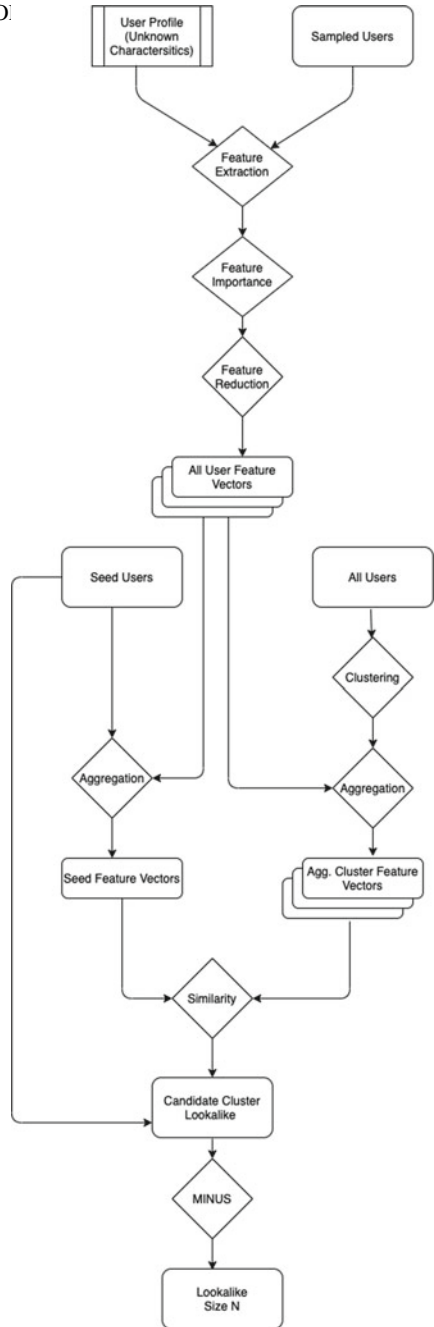
17.5 Evaluation

17.5.1 Qualitative Comparison

We first perform a qualitative evaluation for the various methods and study their applicability in multi-tenant environment. Table 17.2 shows that regression methods substitute training during inference for every seed. This makes it longer during inference, as training partly done at prediction time for every seed. Similarity-based methods perform a user-user similarity and are very slow at prediction time due to computation complexity of searching nearest neighbor for every seed element. Segment-based methods need prior informed categories which are generally not available over multiple tenants in EMAs.

17.5.2 Experimentation

As noted above, most of the existing methods suffer from a big drawback in its suitability for multi-tenant EMAs. So, we device a new strong benchmark that has a high enough bar. Since, this statistical behavioral benchmark listed in Sect. 5.2.1 involves choosing among engaging users (that are most likely to engage again), and it is observed to perform reasonably well in Oracle CX marketing applications. Thus, it is reasonable for DYNPRO_CLUST_LOOKALIKE_MODEL to be calibrated against it.

Benchmark Statistical Behavioral Lookalike: For a given metric M (that is, we run this benchmark algorithm separately for each metric OR/CR).

1. Compute for each recipient in profile universe P the value of the metric M. For instance, if the metric is open rate, compute for each recipient the ratio # of opens to # of sends;
2. Bin values of the metric as a 'segment' (SS); the granularity used for this should be high, for instance, 10000 segments. Let SB be in the bins in Seed Cs, and SP be the bins in universe P.
3. Count the number of recipients with each metric value in P. For instance, say k recipients have click rate of 0.0123; find k for each open rate represented by recipients in SB.
4. To build lookalike Q^* by sampling from P using following criteria: From each 'segment' in Seed bins (SB), for each metric value v in SS, randomly choose recipients from SP proportion to k.

Methodology The datasets are drawn from real customers A1 and A2, with Dataset1 for retail, and Dataset2 for airline from Oracle CX marketing B2C application. We pick existing audiences from existing campaigns seeds that already been targeted in these historical campaigns, forming our seed audiences for which we

Table 17.2 DYNPRO_CLUST_LOOKALIKE_MODEL versus other methods

Criteria	Regression-based	Similarity-based	Segment-based	DYNPRO_CLUST_LOOKALIKE_MODEL
Training	NA	No	Prior informed categorization	Less Frequent, but fairly intense
Prediction	Very slow	Very slow	Fast	Fast
Computation	Medium	High	Low	Low
Multi-tenant	Repeated method for every tenant	Difficult as no uniform attribute over every tenant	Difficult as no uniform categories across tenantevery tenant	Standard/samemethod for ever
Technique	Logistic regression	Nearest neighbor	Generalization of category	Clustering and vector similarity

Table 17.3 DYNPRO_CLUST_LOOKALIKE_MODEL vs benchmark OR

ACCOUNT	SEED NAME	SEED SIZE	AVG. SEED[b] Campagn OR performance[c]	AVG. BENCH-MARK LOOK ALIKE. OR performance[4]	AVG. DYN-PROCLUST_ LOOKA- LIKE OR performance[4]
Dataset1	Seed1_1	426K	16.1%	11.8% (−4.3%)	12.3% (−3.8%)
	Seed1_2	407K	11.3%	9% (−2.3%)	12.2% (+0.9%)
Dataset2	Seed2_1	121K	17.6%	13.2% (−4.3%)	15.0% (−2.6%)
	Seed2_2	51K	15%	14.4% (−0.6%)	14% (−1%)
AVERAGE			15%	12.1%	13.38%
				81% OF SEED	*89% OF SEED*

need to build the lookalikes. Since, the performance of the seed is now known A priori as these are historical campaigns, we can compare seeds performance to the lookalike ones by looking at historical performances. We build the lookalikes using both mechanisms and then compare its performance with the statistical benchmark. Since we are not performing a live test, the lookalikes have not been sent in the seed campaign, yet, we infer its performance by looking at its performance in campaigns similar to the seed campaign. We device a heuristic (Sect. 5.2.3) to find out similar campaigns to seed campaign.

Similarity Definition: Campaigns that received most of the seed Seed1_1, Seed1_2 are drawn from account A1 that has launched real campaigns C1 and C2, respectively. Seed2_1, Seed2_2 are drawn from A2 that has launched real campaigns C3 and C4, respectively. The campaigns are reasonably big >50 k users. Note, since the above methodology is only evaluating on historical measurements, and the seed campaigns (C1…C4) have not received the new lookalikes, we use a similar campaigns heuristic for evaluation of lookalikes. We assume the marketers are intelligent and send similar audiences to similar campaigns. Based on this assumption, we use a simple heuristic that campaigns are similar when they receive most of the seed audiences (Seed1_1, Seed1_2, Seed2_1, Seed2_2), if not all. Table 17.3 shows the open rate evaluations and Table 17.4 the click rate ones.

17.6 Pro and Cons

I. The DYNPRO_CLUST_LOOKALIKE_MODEL is a segment-segment comparison approach. It is very scalable at inference time being computationally light.

II. During training, it performs clustering over the entire user universe, but this infrequent and is a batch process. As such our algorithm has a do-once use-many (reusability) paradigm.

Table 17.4 DYNPRO_CLUST_LOOKALIKE_MODEL vs benchmark CR

ACCOUNT	SEED NAME	SEED SIZE	AVG. SEED[b] Campagn CR performance[c]	AVG. BENCH-MARK LOOK ALIKE. CR[4]	AVG. DYN-PRO_CLUST_ LOOKA-LIKE CR performance[4]
Dataset1	Seed1_1	426 K	0.8%	0.7% (−0.1%)	0.7% (−0.1%)
	Seed1_2	407 K	0.7%	0.6% (−0.1%)	0.7% (+0%)
Dataset2	Seed2_1	121 K	1.5%	1.1% (−0.4%)	1.4% (-0.1%)
	Seed2_2	51 K	1.1%	1.0% (−0.1%)	1.3% (+0.2%)
AVERAGE			1.03%	0.85%	1.03%
				83% OF SEED	100% OF SEED

[a] Similar campaigns Cs that match a simple heuristic: Campaigns that received most of the seed
[b] Since entire seed is not sent in similar campaigns, we only consider in each Ci its. overlapped seed audience for its metrics evaluations:
[c] Aggregate performance of seed in top N similar campaigns Cs avg_top_N (perf_Ci(aud(Ci) intersection aud(S))
[d] Aggregate performance of lookalike in top N similar campaigns Cs
avg_top_N (perf Ci(aud(Ci) intersection aud(Q^*))

III. The approach is not campaign-specific, in that it does not use the context of the campaign explicitly, and as such is generic method.
IV. The approach is unsupervised. Hence, it does not need labels. This reduces the training complexity.
V. The pre-processing serves the needs of varying user characteristics in multi-tenant applications. This feature importance and reduction methods allow for any set of features to be ingested into the process without prior knowledge.
VI. On the other hand, the lookalikes are accurate as long as the sufficient set of features are passed that are informative. If not, then the lookalikes may not perform well.

17.7 Conclusion

Digital campaigns in enterprise marketing applications (EMAs) are getting increasingly sophisticated. The marketer demands intelligence during the campaign creation and optimization process. Adding intelligent lookalikes to provide campaign expansion is critical for long running campaigns. The prior lookalike methods are not optimal or adequate to run in EMAs as they are in general multi-tenant. For such needs, we device an unsupervised machine learning approach. Firstly, we extract features from the dynamic (varying) set of characteristics for each enterprise. Then, we standardize and reduce the features to a known dimension length to be subsequently fed to clustering methods for the entire user universe in enterprise. Finally, we perform cosine (or similar) similarities on various vectors to draw out lookalikes.

The process is compute efficient and infers quickly. When compared to a statistical behavioral benchmark method, it produces 8–17% more accurate lookalikes.

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Part VII
Marketing, Geomarketing and IOT

Chapter 18
Arts Marketing in Development of Smart City Tourism Experiences

Radmila Janičić

Abstract The paper presents theoretical and practical aspects of impact of arts on touristic experiences. The subject of paper is theoretical and practical approach in development of touristic experiences by arts events and arts environment. Experience marketing in tourism is new field of marketing research in academic institutions and scientific marketing associations. The goal of the paper is to develop touristic experiences based on culture, arts, media and arts environment. Specific goal of the paper is to enlighten strategies of experience marketing in development of touristic experiences based on arts. In empirical research, the paper will present result about segmentation of target groups of tourists whose choose touristic destination on the base of art's events, as well as their satisfaction with arts events in the time when they were in chosen destination. Results of research about tourist's satisfaction would be important for further research of development of touristic destination as brand.

18.1   Introduction

The subject of the paper is theoretical and practical approach in development of touristic experiences by arts events and arts environment. Experience marketing in tourism is new field of marketing research in academic institutions and scientific marketing associations. The goal of the paper is to develop touristic experiences based on culture, arts, media and arts environment. Specific goal of the paper is to enlighten strategies of experience marketing in development of touristic experiences based on arts and arts environment. The paper gives overview of all experience marketing approach, experiential marketing tools, holistic marketing elements, internal marketing, integrated marketing, social responsible marketing and relationship marketing in tourism. Key hypothesis of the paper is that the implementation of holistic marketing strategies in development of destination brand on global market place, based on touristic experiences, culture and arts, is modern platform for development economy of one country. Good examples of implementation of culture and

R. Janičić (✉)
Faculty of Organizational Sciences, University of Belgrade, Jove Ilica 154, 11000 Belgrade, Serbia
e-mail: radmila.janicic@gmail.com

arts in development of brand destination, based on touristic experiences, on global market place, are present in the paper. The research in the paper is based on case studies of good examples of experience marketing in development of touristic experiences by arts. The research, in second part, is based on focus group that realized with touristic organizations in the cities and described in case studies. Focus group has done with managers of touristic organizations. The research is based on qualitative tools.

18.2 Experience Marketing, Experiential Tools and Holistic Marketing Approach in Development of Tourism Based on Arts

Artistic projects and artistic environment have impact on development of touristic experiences and tourism in one city. History facts prove that arts develop visits of tourists. Modern society needs cultural and arts content when they visit some city [1].

Holistic marketing approach has challenge in improving planning process of tourism. Holistic marketing approach has integrated marketing communication with target audiences, which present opportunities for research needs and wants of public, as well as social movements [2]. All parts of holistic marketing approaches are important, internal marketing, integrated marketing, relationship marketing and social responsible marketing, present in Fig. 18.1. Internal marketing strategies improve touristic organizational structures and communications with team workers. Strategies of integrated marketing improve consistent of touristic services storytelling. Social responsible approach is base for every touristic services. Strategies of relationship marketing make platforms for clear and direct communications with target audiences of touristic services. In all these ways, a holistic marketing approach is the base platform for realization of development of tourism [1].

Holistic marketing approach has integrated marketing communication with target audiences of touristic services, which present opportunities for research needs and wants of tourists. It is very important that integrated marketing communications have consistent storytelling with target audiences of touristic services [4]. Strategies of relationship marketing develop and improve communications between touristic institutions and their target groups. Social responsible approach gives platform for development of tourism, as well as purpose and message to target groups. Strategies of relationship marketing have specific impact in leading of touristic development. They give opportunities of interactive communications with public through traditional ways of communication and modern, social media. Two way communications give opportunities for listening of wants and needs of public that shows ways for future touristic development [3].

The experiences are regarded as key concepts in marketing today, and there are different views and interpretations about the content of terms. Experiential marketing

Fig. 18.1 Model of holistic marketing approach [3]

is a marketing technique that creates experiences between brands and consumers. There are two connected concept of experience and experiential marketing.

A consumers create meaning to all perceives. Experience represents a meaningful relationship between a person's perception activity and a life situation and is of particular significance to the person [6].

When the customer experiences something to be important, this forms of life situations consisting of everything are in meaningful relationship [6]. The difference between experience and experiential marketing is presented in Fig. 18.2. Experiences are formed out of these relationships and life situations [6].

18.3   Good Examples of Impact of Arts on Development of Touristic Experiences

The good example of implementation of development of touristic experiences based on arts is "Budva Theatre City". Every night in centre of city Budva in Montenegro, during summer nights, tourists have opportunity to enjoy some artistic presentation in "Budva Theatre City", in theatre events, in music events, literature events, exhibitions and philosophical discussions.

It is theatre under the open sky, surrounding by old stone houses and in the centre is stage where visitors could enjoy in arts, brilliant actors role and stories all-around of the world. Every nigh, theatres around world present their theatre projects, literature events, music events, exhibitions, movie nights and philosophical discussions. Some projects are traditional, but some other projects are interactive, so visitors can take

Fig. 18.2 Difference between experience and experiential marketing [6]
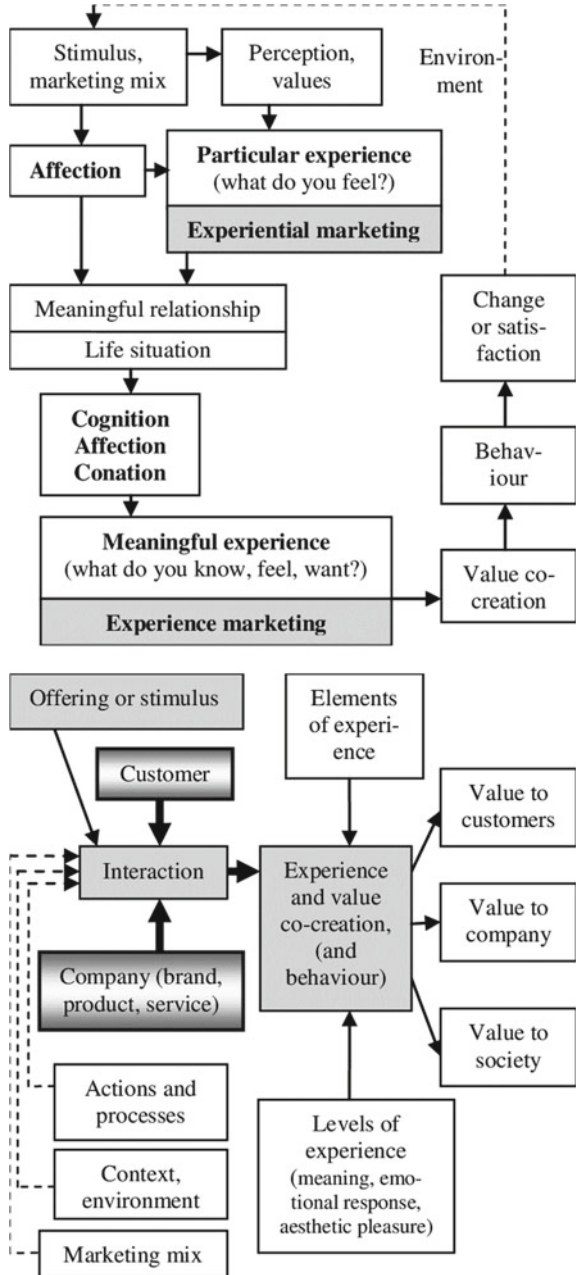
part in events. The city Budva bases brand of destination by this open sky theatre, with others touristic, historical, gastronomy, hospitality and culture that city Budva gives.

Tourists had opportunity to enjoy in touristic services in cities, as well as to enjoy in theatre events. Visitors had opportunities to introduce beautiful theatre, literature and music events. Specially touchable is theatre events with stories of life of historical persons, music nights with brilliant musicians, writers, painters, photographers, present in Figs. 18.3 and 18.4.

After projections, visitors could write comments in the yellow book in theatre, or online, on Web site of theatre, on Instagram, Facebook or Twitter pages. The comment was that visitors enjoy in beautiful artistically events. The theatre events had attention of media, televisions, radio stations, as well as, social media. The theatre events bring artistic experience to visitors. Touristic visits in the Budva rise every year. It proves that cultural and art's events impact on development of tourism on global market place.

Good example of implementation of experience marketing of arts in development touristic experiences and development of tourism of one country, as brand destination is Split, in Croatia. Split has deep historical and artistic stories, brilliant hospitality, gastronomy and tradition. Tourists adore to walk around streets of old centre of Split to feel sea, mountains and kindness of people. In the centre of the city is Croatian National Theatre, it is place where tourists could enjoy in art of theatre. Music, movie, literature and dance festival follow summer time spirit. Tourists enjoy in atmosphere of arts and culture in beautiful Split, full of arts and culture, present in Fig. 18.5. Gastronomy, arts events, history, tradition, hospitality, all these give great touristic experiences and develop Split as brand destination.

Fig. 18.3 Theatre City Budva, guest of evening is Bitef theatre from Belgrade with The King New Dress. *Source* (gradteatar.me)
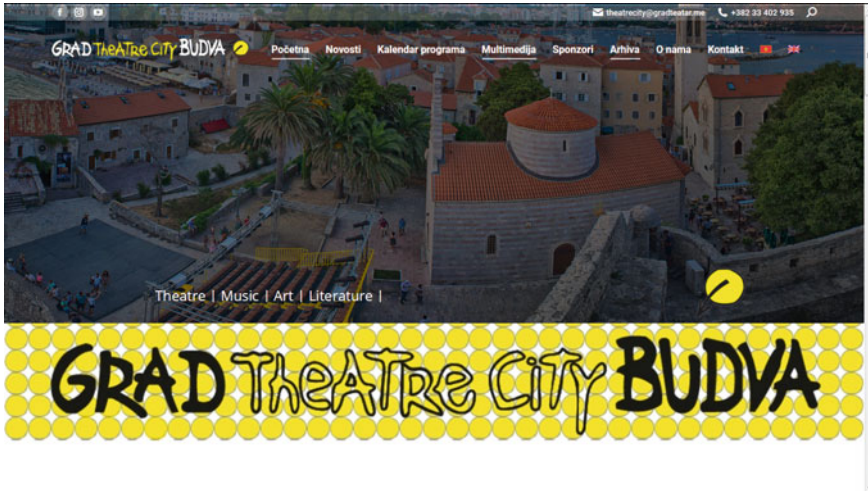
Fig. 18.4　Theatre City Budva. *Source* (gradteatar.me)
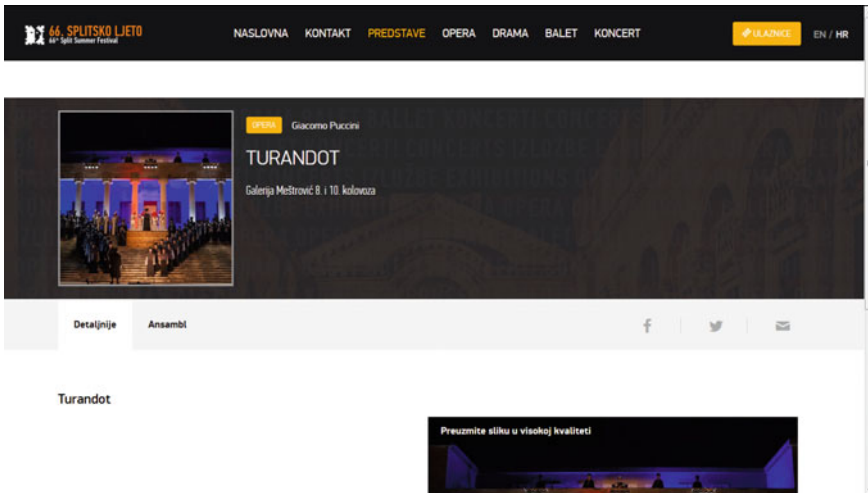
Fig. 18.5　Split summer arts events. *Source* (splitsko-ljeto.hr)

Good example of implementation of experience marketing of arts in development of tourism in European cities is exhibition Leonardo da Vinci—500 yr of genius. The exhibition was present in London, Rome, Venice, Paris and Athens. In that time, many tourists came to chosen city to enjoy in life of city and visit exhibition.

The exhibition gave whole view of Leonardo da Vinci work, life and thoughts. The first room presented Leonardo's machine works. Second room presented Leonardo's medical research of human body, present in Fig. 18.6. Third room presented different

Fig. 18.6 World Exhibition "500 yr of Genius". *Source* (whyathens.com)

views on Leonardo's favourite paintings "Mona Lisa", present in Fig. 18.7. Families with children, young people, middle age people and retired people were visitors. They enjoyed in look on Leonardo's paintings. Special room presented Leonardo's painting "Secret dinner". In middle of exhibition was room where was presented

Fig. 18.7 World Exhibition "500 yr of Genius". *Source* (whyathens.com)

multimedia artist's work, with his philosophical thoughts, such as "Nothing can be loved or hated unless it is first understood", "In time and with water, everything changes", "Water is the driving force in nature". Comments on social media were that exhibition is brilliant as Leonardo da Vinci deserve. Especially, young people was interested on his work, thoughts and life. Many young tourists come to London, Paris, Rome and Athens. Whole exhibition was sophisticate, and, also, strong experience, according to visitors comments, what inspired tourists around world to come and visit exhibition.

18.4   Focus Group

Author of this paper had opportunity to make focus group with touristic managers in touristic organization of Budva, Split and Athens.

Managers of these organizations conclude that culture and arts have impact on development of tourism in Budva, Split and Athens. They emphasized that all aspects of holistic marketing approach are important, internal marketing, integrated marketing, relationship marketing, based on social responsible approach in development of tourism, based on culture and arts. Interesting is that they enlighten role of care about tourists, in the way that people, visitors feel that touristic institutions and organizations, hotels, hostels, restaurants, cafe bars, as well as cultural and art's institutions care about them and their experiences.

All these institutions touristic and artistic care about history, tradition and in that way give brilliant experiences to tourists. They emphasize that in implementation of marketing in development of tourism based on arts and culture, and it is important to be passionate about tourism, be kind in hospitality of tourists, respectful and sophisticate with tourists. Members of focus group, managers of touristic destination Budva, Split and Athens, emphasized that it is important that offline and online media write in good way about society, people, hospitality, nature, culture, and history, arts in Montenegro, Croatia and Greece. They concluded that media contents about tourism, culture and art's events have impact on development of destination brand. Every year people come to Budva, Split and Athens to visit historical places, to visit National Theatres, exhibitions and museums. Media in these countries enlighten all aspects of history, arts and culture. People on social media share pictures of Budva, Split and Athens and their experiences. Tourists write comments on social media, like Facebook, Twitter, especially Instagram about their visits. On the other side, managers of touristic organizations, emphasized that it is important to open Instagram profile of touristic organizations whose call tourists to send their pictures, as well as managers call artists, photographers, painters to send their works, so all pages are focus on the cities.

18.5 Conclusion

The paper presents theoretical and empirical approach to experience marketing and impact of arts on development of touristic experiences. In that way, countries could build brand destination. In the paper are present case studies, as good examples of impact of arts on development of touristic experiences. The research in the paper has done by focus group with managers in touristic organizations. The research is qualitative.

Theoretical analysis, comparative analysis, examples from practice and focus group with managers in touristic organizations about implementation of culture and arts in development of touristic experiences give conclusion that it is necessary to innovate marketing strategies in the field of tourism. It is interesting that they enlighten role of care about tourists, in the way that tourists, visitors feel that touristic managers and art's institutions care about them and their experience. Media contents about tourism, culture and art's events have impact on development of destination brand. Social media gives opportunities to share experience about destination, to write comments and create groups to describe beloved destination brand. Media have role to improve destination as brand. Specialized journals for tourism write about touristic important facts, but it is, also, important that daily newspaper write about ordinary touristic information, cultural and art's events, about lifestyle of local people, tradition, music and history. It is very interesting that even movies impact on development of destination brand. Literature has an impact on destination brand, by located storied on some city, describing flow of book in that city. Social media have the most important impact, because many bloggers have stories about experience in some city. They describe experiences, feelings, gastronomy, history, culture and arts of some city. Synergy of all these elements impact on development of destination brand.

Results of focus group emphasized the most important experiential tools for developing of touristic experiences and building of brand destination. In focus group, touristic managers emphasized that in implementation of marketing in tourism, and it is important to be passionate about arts, culture, hospitality, respectful and sophisticate and include culture and arts in development of touristic experiences in order to build brand destination. Arts open hearts and it is way to connect people and share messages.

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Chapter 19
The Territorial Organization of Public Tourism Statistics in Spain: A Problem of Date Generation and Use in Geomarketing

María Pilar Peñarrubia Zaragoza and **Moisés Simancas Cruz**

Abstract The changes produced in the last decade in tourism have generated new demands for statistical information that is comparable over time and space, on a microdata scale and focused on knowledge of tourist behaviour. However, the decentralization of the production of tourism statistics in Spain, derived from the division of powers between the Spanish state and the autonomous communities, has produced the emergence of various and multiple alternative entities for the generation and transfer of tourism data. This fragmentation produces a high dysfunctionality and inefficiency, due to, among other circumstances, a high heterogeneity and duplication of data, a heterogeneity of methodology and types of data, which impede comparability, a duplicity of spending, etc. All this explains the non-existence of a state statistical system integrated tourist data. The result is that the important advances in the statistical production and its diffusion from the scope of some autonomous communities contrast sharply with the stagnation of the model of institutional coordination. Therefore, we are facing a problem of lack of governance. The main objective of this paper is to identify the weaknesses of the current territorial organization of public tourism statistics in Spain; this is to a problem of data generation and use in geomarketing.

19.1 Introduction

Every tourist destination has attractive elements for particular and specific segments that only satisfy certain types of demand. Indeed, every destination has a unique profile due to its various physical features, which in turn affect its intangible aspects.

M. P. P. Zaragoza (✉)
Department of Geography, Universitat de Valéncia, Comunidad Valenciana, 46014 Valenciana, Spain
e-mail: M.Pilar.Penarrubia@uv.es

M. S. Cruz
Department of Geography and History, Universidad de La Laguna, 38200 Santa Cruz de Tenerife, Spain
e-mail: msimancas@ull.es

This gives rise to a certain spatial behaviour among tourists, in the sense that most of those that are found in the same area display similar preferences, needs, motivations, behaviours, habits, attitudes, expectations and patterns of geographic mobility and also consume similar products and services [1].

Identifying relatively homogenous subgroups of tourists based on the supposition that they share a common interest in certain characteristics of a tourism area is possible and necessary. Doing so allows the territorial behaviour patterns of tourists to be identified, which can then be used as the basis for the spatial classification of homogenous tourism areas.

The territorial variable is essential in this segmentation and even micro-segmentation processes, not so much for its influence on behaviour, but rather for its capacity to identify and characterize homogenous groups of tourists [2] and, therefore, the aforementioned areas. However, the usual approaches to segmenting demand usually overlook such considerations. Geomarketing can resolve this problem because, among other things, it is an efficient marketing methodology and planning technique which allows the geographic behaviour patterns of the consumer to be defined. However, there are various problems with applying marketing in coastal tourism areas, among which is the lack of microscale, geo-referenced and/or geo-coded alphanumeric statistical information.

19.2 Problem Statement: The Lack of Adequate Statistical Fata for the Application of Geomarketing Techniques

Geomarketing techniques and strategies provide an answer to innumerable issues closely tied to geography that were traditionally dealt with using marketing techniques. It is not just a way to track the geographic location of people using geographic location data obtained from a mobile device. On the contrary, it can be applied to spatial economic analyses, based on the sociological–geographic premise that people who share nearby geographic spaces tend to have similar behaviours, consumption patterns and attitudes.

In essence, geomarketing is a discipline that analyses markets from a territorial perspective. It represents a confluence of geography and marketing, although some authors view it as a unique field [2–6]. According to reference [3], the main function of geomarketing is to approach the four elements of traditional marketing (product, communication, distribution and price) from a spatial perspective. This helps answer several key questions asked when developing business strategies: who are our clients and who should be our clients; what are the complementary establishments: where are our clients located; what do they buy; what do they use; where is our potential market; are our distribution points located in the right places; or where should we focus our marketing campaigns. It is essential to understand the elements that make up a geomarketing system: the location and management of territorial statistical information, understanding how the geographic information system

works, proficiency in statistical techniques and spatial econometrics (localization models, spatial interaction models, spatial regression) and knowledge of strategic marketing tools [4].

Applying a geomarketing system in a tourist destination allows more detailed studies to be carried out, if the appropriate data is available, especially regarding tourist behaviour and the weaknesses and potential of the destination. In line with *intelligent business systems,* applying geomarketing to the territorial segmentation of tourist areas allows for the sufficient scalar desegregation of data, generating knowledge about tourists and how they relate to the territory. This facilitates making intelligent decisions in tourist destinations. For this geomarketing processes require a large amount of diverse, alphanumeric statistical information at the microscale that is georeferenced and/or geocoded so that they can be properly represented on a map [7, 8]. These geographic data are necessary to define areas in which tourists have similar characteristics. Spatial data processed using spatial statistics and visualized through thematic maps in order to determine market behaviour in specific geographic areas is used to help make informed business decisions [9]. In this regard, reference [10] suggests that the most sought after information is the demand profile, followed by a relative analysis of the supply and competition and about innovation. Therefore, going beyond mere information about the number and origin of tourists, these spatial data should provide a deep understanding of tourist preferences, behaviours, needs, expectations, consumption patterns, purchasing behaviour and attitudes, all of which can be compared over time and space.

However, traditional sources of public statistics are not adapting well to the current demand for tourism information, the use of data derived from digital footprints or the impact that information and communication technologies are having on both the consumers and supply [11]. The data provided by traditional statistical institutes and observatories on the local level provides an extremely limited representation of the state of the tourism system [8]; in this sense, the information is usually reduced to the number of visitor arrivals and departures, the number of overnights, the amount of money spent by foreign tourists, etc. Additionally, although there are instruments and resources that provide optimal conditions to collect data, there is still a lack of methods that can unify information at different territorial scales. Thus, the statistical averages at the municipal level do not reflect the varied situations in different tourism areas in each municipality. Therefore, the usual public statistics sources are not enough to obtain a detailed understanding of the profile of today's tourist at the municipal and, above all, infra-municipal levels.

For more than thirty years, the sources of tourism information in Spain have centred on collecting data [12, 14]. However, public data sources are outdated in relation to the information necessary for geomarketing. Reference [12] already pointed out the need to elaborate new statistics in a framework in which the information was unstructured and offered little information related to travellers and their trips. Reference [13] reveals some of the shortcomings listed by [12] and alludes to a statistical treatment limited to the limited data on the movements and characteristics of tourists, as well as the offer of accommodations and tourism spending. Through an analysis of the opinions of different expert users of tourism information sources,

[15] points out serious shortcomings: (a) the lack of sources of information; (b) their inability to provide a comprehensive understanding of tourism activity; (c) their inadequacy in the face of the variability in the changes taking place in the sector; (d) the confusion in conceptualization; (e) the lack of accessibility, which involves a certain amount of obfuscation in the management of tourism information, as well as delays in production times; (f) the inadequate geographic scale, as the data is usually systematized at the regional (autonomous community) or provincial levels, but not at the local level; (g) the heterogeneity of the sources, which hinders comparative analyses between territorial areas and h) the lack of prospective analysis, information sources are oriented towards events that have already happened and do not anticipate future actions.. Reference [10] also considers the tourism information provided by the institutions to be out of date, disperse and often not public. At the same time, they suggest that any tourism knowledge and information platform must incorporate private's sources of information [10]. This makes it necessary to examine the public systems of tourism data collection, especially those related to tourist behaviour, preferences and movements.

The main objective of this paper is to identify the weaknesses of the current territorial organization of public tourism statistics in Spain; this is to a problem of data generation and use in geomarketing. In order to provide empirical evidence, analysis is carried out on statistics provided by the state (national scale), the autonomous community of the Canary Islands (regional scale) and the island of Tenerife (insular scale). The Canary archipelago is one of the main coastal vacation destinations in Europe; according to the Canary Islands Statistics Institute (ISTAC), the islands received 15.110.866 visitors in 2019, ranking first in overnight stays in tourism accommodations for non-residents among the 272 Nuts two statistical regions of the European Union.

19.3 Methodology and Sources

This paper is presented as a case study. Thus, it is approached with an empirical research methodology with fundamentally qualitative techniques based on the study of the real context, in which multiple sources of evidence are used and with an essentially inductive, partially, deductive scientific approach. To do this, a comparative analysis of public statistics on Spanish tourism is necessary.

The public bodies that have traditionally managed the data on tourism activity in Spain have been the INE and the Sub-Directorate General for Tourism Knowledge and Studies, belonging to Turespaña. INE is regulated by Law 12/1989, of 9 May, on the Government Statistics Act, which regulates the national statistical activity, which is the exclusive competence of the central government, as well as by Royal Decree 508/2011, of 11 May. Among INE's statistical operations, 22 are related to hotel and tourism operations; INE is the service responsible for carrying out and disseminating 14 of them and is a participating body in the rest. However, in accordance with the objective of this study, we will only analyse INE's main

statistical operations directed at tourism demand through direct personal interviews with tourists: the "Residents Travel Survey" (ETR/FAMILITUR), the "Statistics on Tourism Movements on Borders" (FRONTUR) and the "Tourist Expenditure Survey" (EGATUR). These statistics study visits (trips and sightseeing) taken by both residents (ETR/FAMILITUR) and non-residents in Spain (FRONTUR and EGATUR). Tourism visits are considered any movement outside an individual's habitual area of residence (lasting less than a year), as long as the main reason to travel is not for employment in a business located in the place visited.

Public administration at the regional level in Spain is carried out by the autonomous communities. Each autonomous community has its own system to generate statistics related to their territory, which is organized and run according to their own legal norms (autonomy statutes, statistics laws, statistics plans, etc.). ISTAC is the central body of the statistics system in the Canaries and the official research centre of the Government of the Canary Islands. This institute was created and regulated by Law 1/1991, of 28 January, concerning Statistics in the Autonomous Community of the Canary Islands. Its functions include providing statistical information in this autonomous community, addressing the particular needs of the islands and following the principles established in the European Statistics Code of Practice, as well as coordinating public statistics activity for the archipelago.

The strategic importance of the tourism sector within the economy of the islands explains why ISTAC elaborates nine statistical operations dealing with the hospitality and tourism industries. These operations cover various topics, but the ones that are related to our study are FRONTUR-Canarias ("Statistics on Tourist Movements on the Borders of the Canaries") and EGT ("Tourist Expenditure Survey").

Article 23 of the Statute of Autonomy of the Canary Islands establishes that each island is responsible for carrying out the functions that have been transferred or delegated to them by the autonomous community and for collaborating in the development and execution of the agreements adopted by the Government of the Canary Islands, in accordance with the laws established by its parliament. In this sense, the *cabildos insulares* ("island councils") act as government, administrative and representative bodies for each island, with a dual condition: on the one hand, they are the independent entities of insular governance, and on the other, they are institutions of the autonomous community of the Canary Islands. As an institution of insular government, in 1975 the Cabildo Insular of Tenerife was the first body in the autonomous community to generate tourism statistics. Today, it carries out three operations to collect tourism data. The area of Employment, Commerce, Industry and Socioeconomic Development carries out the "Tenerife Receptive Tourism Statistics" and "Survey of Tourists Visiting Tenerife". The area of Tourism, Internationalization and Foreign Action systematically collects data on hotels and non-hotel accommodations through its "Tourist Police" department.

The sequence followed in the research work has been the identification and analysis of the tourist statistical sources elaborated by public administrations at different scales (national, regional and local) (Table 19.1), with the aim of detecting duplications.

Table 19.1 Comparative analysis of the operations carried out at each scale

Institution	Statistical operation	Scale
INE	FRONTUR	National
	Overview of tourist spending (EGATUR)	
	ETR/FAMILITUR	
	Hotel occupation survey	
ISTAC	FRONTUR-CANARIAS	Regional
	Tourist expenditure survey (EGT)	
	Tourism accommodation survey	
Cabildo	Receptive tourism in Tenerife statistics	Insular
	Survey of tourists visiting Tenerife	
	Police registry	

Source Adapted from reference [8]

19.4   Main Results and Contributions

19.4.1   The Lack of Continuity and Consistency Between the Different Administrative Levels in the Construction of Data

There are currently many primary sources of information on tourism available at different geographic scales in Spain (table 19.1). Nevertheless, the way in which these large volumes of information are obtained make it difficult to convert the data into concrete knowledge [16].

The public institutions themselves began to have concerns about the production of statistics, leading INE in 2011 to consult the main institutions who used these information sources regarding the strengths and weaknesses of the system. Reference [17] enunciates the deficiencies that were registered, highlighting the difference between the information needed by the public administrations (tourist spending by residents, private accommodations used for tourism, information about excursions, as well as greater dissemination and in shorter time) and private businesses, which demand not only indicators, but also forecast regarding the probable tendencies in the sector.

The transversal scalar analysis carried out by reference [8] on the different public statistics operations detected a serious problem related to the duplication of tourism statistics operations at different geographic scales (Table 19.1). Thus,

various statistics related to tourism supply and demand overlap, juxtapose and super-impose different scales, continuously generating redundant data, specifically, related to tourism demand.

The statistics related to demand are repeated in the operations carried out at each scale by different institutions: INE creates the FRONTUR-EGATUR and ETR/FAMILITUR surveys; ISTAC creates FRONTUR—with the sample expanded for the Canaries—and the Tourist Expenditure Survey, and the Cabildo of Tenerife is in charge of the "Survey of tourists visiting Tenerife". Despite having the same objectives (understanding the behaviour, characteristics and spending of tourists in destination and origin) and methodologies (data collection in airports at the end of trips), the statistics provided by INE and the regional and insular statistics are gener-ated in different areas of action. The statistics provided by INE cannot be disag-gregated below the regional scale (autonomous communities), making them invalid for making decisions at sub-regional scales. In addition, INE's surveys are based on traditional variables that had provided adequate information before the appearance of the new tourist paradigm. However, using only these kinds of variables today leaves serious gaps in the information needed to understand tourist behaviour. In contrast, the statistical operations elaborated at the regional and insular scales allow for adequate geographical disaggregation, and they also consider variables that allow new tourist behaviours to be understood. With this in mind, two statistical operations have been identified that are valuable due to the quantity of information they are capable of providing; the reason they are both used is because one presents official tourism statistics produced in accordance with European law and global recommen-dations (ISTAC), while the other is flexible enough to constantly adapt to meet the needs of the demand relatively quickly (Cabildo de Tenerife).

19.4.2   The Disarticulation of the Territorial Organization of Public Tourism Statistics in Spain as an Explanation of the Problem

Explaining this problem is the disarticulation of the territorial organization of public tourism statistics in Spain. The situation of public tourism statistics in Spain is conse-quence of the compartmentalized and sectorial political and administrative structure derived from the distribution of competences established in the Spanish Constitution of 1978. This made Spain a decentralized political and administrative state, following the principles of subsidiarity contemplated in article 5 of the Treaty of Maastricht. In virtue of this constitutional precept, Law 12/1989, of 9 May, concerning Public Statistics, outlined the competences of the central and regional administrations in the area of statistics in its explanatory statements: "state competences are unlim-ited and absolute, regardless of the also absolute competences of the autonomous communities to organize and generate statistics that concern their interests". This allowed both the central administration and that of the Canaries to develop complete

statistical services and activities and, therefore, to design, collect, validate, record, filter and carry out any other treatment of information.

This decentralization of the production of tourism statistics caused by the distribution of competences (following the principle of subsidiarity) between the Spanish state and the regional autonomous communities has given rise to many alternative entities that generate and transfer tourism data. This explains the proliferation of regional, supra-municipal (insular), municipal and even infra-municipal (tourism area scale) statistical instruments. Diverse public administrations now produce and publish their own tourism data without coordinating their efforts with other administrative levels or even with the central state administration, despite the fact that seeking opportunities for cooperation could be crucial or at least convenient, given that they also have functions and competences assigned to them.

The transfer of exclusive competence over statistics for non-state purposes created a functional decentralization in tourism statistics, with the exception of those for "state purposes". This explains some of the dysfunctionality and inefficiency in the current organization of Spanish statistics, with the consequent negative effects on the generation, use and dissemination of tourism data.

First of all, it generated a *sui generis* model of regional decentralization. The territorial organization of Spanish tourism statistics is unique, and therefore, it is difficult to compare it to other international examples [18].

Second, the shift from a centralized state to a state with autonomous communities does not only generate changes in scale, but also gives more protagonism to the public administration that has the competence produce and disseminate tourism data at the infra-state level. In this sense, the strategic role of the regional administration was reinforced, placing it on par with the state and local levels. This explains the great diversity in administrative structure among the different levels and territories; it is possible to find the same competence in partially or totally different departments, sometimes as the only focus of that department, sometimes in conjunction with other matters. This has made it more difficult to define a single, integrated statistical system; although this is not surprising given that the preamble of Law 12/1989 expressly renounced a system of statistics that integrated the central administration and the autonomous communities.

Third, given the administrative organization of Spain, each autonomous community has its own system to generate statistics in its territory, elaborated according to its own laws (statutes of autonomy, statistics laws, statistics plans, etc.). This has increased the complexity of the political–administrative structure of public tourism statistics: a state agency (INE), autonomous communities with their own statistics agencies included in their regional administrations and provincial statistics agencies that form part of the central system; to all of this, we have to include the case of the Canary Islands, in which some of the cabildos insulares generate and disseminate their own tourism statistics. The result is a disparate set of 17 regional statistics organizations, with highly unequal development and capacities. At the same time, for the most part, they are "closed and independent systems from each other and even virtually impermeable" [18].

19.4.3 The Effects on the Production of Tourist Data of the Territorial Organization of Statistics

This fragmentation is extremely inefficient. Among other issues, it generates duplicate data, parallel statistical operations and heterogeneity in the methodology and types of data, hindering the ability to compare results, an overload of responses to the departments in charge of disseminating the information, increased spending, etc. This problem is exacerbated by the fact that instead of undertaking the work of coordinating, harmonizing and regulating these new sources, the National Statistics Institute (INE) has limited itself to producing its own data. This explains why there is no integrated state statistical system for tourism data. The final result is that there is a stark contrast between the important advances in the production and dissemination of statistics that have taken place in some autonomous communities and the stagnation of the institutional coordination model.

Similarly, it created a heterogeneous administrative system, given the diversity of organizations of the 17 Spanish autonomous communities. This has created a dual situation: while some autonomous communities have shown interest in creating their own tourism statistics apparatus, as in the case of the Canary Islands, which, in practice, has created a network parallel to INE, others have only stated their intention to do so. To a great extent, this difference is the result of different capacities for organization and management by regional governments and political will, which is manifested through adequate budget funding and providing personnel to produce, treat and disseminate the statistics.

Furthermore, it provoked a rupture between the different levels of decision-making defined by the political system. This is because decentralization has been accompanied by a lack of coordination and cooperation between different administrations in the Spanish state [19], both vertically and horizontally, formally and informally [20, 21]. In addition, competition between the central and regional governments contributes to blocking any advance in collaboration on statistics. This attitude is also expressed by a lack of collaboration between public institutions and other organizations, that are not necessarily public, but that have the capacity to generate big data [8]. In other words, the mechanisms for voluntary coordination and cooperation between the state and the autonomous community have failed, as well as the homogenization of statistics contemplated in Law 12/1989. To make matters worse, infra-regional services do not allow themselves to be subject to effective coordination and the central body in charge of statistics (INE) is not positioned correctly in the organizational chart, which in practice hinders it from exercising its competences [18].

All of this was exacerbated by the fact that some of INE's statistical operations were not designed to meet the need for territorially and functionally disaggregated information in the autonomous communities. The same can be said of INE's excessively centralist approach to producing statistics [18]. This explains why the statistics institutes of the autonomous communities opt to broaden the scope of some of INE's operations and to carry them out themselves, in order to obtain the data they need.

The growing importance of administrative statistics also explains why tourism data is generated at the infra-regional scale. Public statistics producers have moved closer to the administrative departments that generate the information, either by directly collecting information, or by exploiting administrative information.

The constitutional transfer of competences explains many of the contradictions in how tourism statistics are generated, but problems can also be seen in the lack of vertical coordination between national, regional and insular administrations and even horizontal coordination between departments of the same public administration. This is because there is no risk of prevalence of regional administrations over insular administrations. So, regional statistics services face difficulties in collaborating in the production of statistics of their autonomous communities. This explains why there is often a lack of coordination in the generation and dissemination of statistical data between the competent regional service (ISTAC, in the case of the Canaries), the councils (departments) in which the regional service does not intervene and the infra-regional administrations.

Therefore, the decentralization of statistical operations has produced more detailed information on tourism which satisfies all the needs of the different levels of public administration in the autonomous communities. This is certainly the case of the Canary Islands.

In this context, the 2018–2022 Statistics Plan of the Canary islands, approved by Decree 78/2018, of 21 May, has two objectives: first, to continue guaranteeing that the autonomous community, the archipelago's institutions and users are provided the statistical information they need to make decisions, at the proper geographic levels, promptly and in accordance with pre-established schedules; and second, to continually improve the efficiency with which the statistics are produced. To this end, it establishes that the statistical operations must be elaborated by ISTAC in collaboration with other bodies and councils of the Government of the Canary Islands. The plan does not figure in the budget for the autonomous community's general administration, because the cost is assumed by the different bodies in charge of executing the operations with the available credit, without needing to make budget changes.

19.5   Conclusions

Data has become a synonym for information, representing the raw material from which knowledge is forged. While data is essential in any sector, it is particularly important to make the proper decisions in tourism. It is no longer enough to simply know the volume and origins of tourists, a deeper understanding is required: this includes their preferences, needs, characteristics, geographic behaviour patterns and distribution systems. Moreover, products and services that improve their experiences by adapting the destination to their needs and expectations must be defined. These changes in tourism activity have generated new demands for statistical information focused on understanding tourist behaviour at the micro-data level that can

be compared over time and space. The possibility of exploiting large databases, the appearance of new demands for information and the need to integrate petitions at the European, national, regional and local levels demand a new territorial and administrative organization of public statistics.

As described, the decentralization of the production of public tourism statistics, derived from the distribution of competences between different administrations in Spain, has given rise to diverse entities that generate and transfer such data. In this sense, the autonomous communities have taken a lead role because in the current distribution of competences they are the main public agents in charge of developing tourism and, as a consequence, of generating tourism data for planning, management and making decisions. Meanwhile, the cabildos insulares, as bodies of government, administration and representation of each island, have also become key agents, with three data collection operations implemented. However, despite the fact that decentralization has intensified the dynamic of intergovernmental relations, as well as led to changes and reforms to facilitate the coordination between administrations [22] and led to a considerable improvement in tourism management [23], the mere decentralization of the production of public tourism statistics in Spain has not improved the efficiency of the services offered. Moreover, although instruments and resources are available that provide the best conditions to collect data, there is still a lack of methods that unify the information from different territorial levels, as well as identify the type of information that is truly relevant to make decisions [8].

The progressive disaggregated at scale (national, regional or sub-regional) analysis of public sources of tourism statistics has led to a large number of problems in terms of duplicated statistical operations. This leads to redundant data, an increase in unnecessary work for informers and greater public expenditure. This leads to competition between the different public bodies at different levels in the elaboration of surveys. As mentioned, this is due to the lack of cooperation between administrations. In addition, it could be useful to make the structures and procedures to generate tourism data established by public bodies more flexible, in order to achieve greater timeliness in their delivery and interpretation.

The situation is made worse by problems in communication, dialogue and associative and collaborative work between statistics agencies in the entire public administration, including the central administration, the autonomous communities and the local administration (insular). The absence of a culture of compromise and cooperation is a major obstacle to the effective operation of the state at its different levels (central, regional and insular). This leads to situations in which statistics agencies at the national, regional, insular and municipal levels, or even different entities at the same administrative level develop identical initiatives at the same time, duplicating the work.

All of this seems to be explained by the lack of multi-level governance. All of these issues that have been discussed here lead to a reflection on the appropriateness of homogenizing the administrative structures. Keeping in mind that coordination does not imply uniform action, but rather coherence, compatibility and the search for a common goal [21], the idea would be to establish criteria for organizing and coordinating different departments that share the same strategic objective in matters

regarding the generation, exploitation and dissemination of tourism statistics. In this order, the multi-level governance can ensure adequate institutional coordination between the different administrations with competences over the generation of tourism statistics. For it, the national entity assumes the role of coordinator of the statistical operations to eliminate the dysfunctionalities and inefficiencies that we have described in the current Spanish statistical organization. To achieve this, we need political leadership and institutional commitment.

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Chapter 20
How Global Brands Create Firm Value: Revisiting Steenkamp's 4V Model and COMET Dimension

Mohammad Bagheri

Abstract Global brands are creating firm value that can be translated into financial outcomes. For this reason, the purpose of the current study is to analyze how global brands create firm value and to conceptualize a framework based on its findings. After thoroughly studying the 4V model and COMET dimension of Steenkamp (How global brands create firm value: the 4V model. Int. Mark. Rev. 31:5–29, 2014; Global brands in a semi-globalized world: securing the good and avoiding the bad. Kenan-Flagler Bus. Sch. UNC-Chapel Hill. 1–68 (2015)), a conceptual model is fashioned to identify the process of creating value in global brands. The proposed conceptual framework extends Steenkamp's (How global brands create firm value: the 4V model. Int. Mark. Rev. 31:5–29, 2014) 4V model through four steps. First, selecting the positioning of the brand in the consumer's mind, second, identifying and targeting the source of value, third, delivering the value, and finally harvesting the value. The model specifies the process for creating value in global brands through a course of actions, which involve both internal and external stakeholders of the company. It underlines the interrelations between each step of value creation and how distinctive activities build the value in the following step and strengthen each other. The limitations of the study are discussed, and new avenues of research are proposed.

20.1 Introduction

One of the main issues that managers are encountering today is finding the best approach to build value into the products and services they offer, especially in the era of which companies usually face challenges such as product commoditization, fast-paced innovations, emergent competitions, and more demanding customers [3]. Knox [4] declares that the central concern in building brand value is the main shift in customers' perception of value that is challenging companies to change the way they create value for them.

M. Bagheri (✉)
The Marketing School, IPAM, Porto, Portugal
e-mail: moe.bagheri@universidadeeuropeia.pt

Bowman and Ambrosini [5] argue that value carries a distinctive meaning for different stakeholders. Provided that the firm functions for the interests of its investors in order to deal with the external stakeholders, it acts as both customer and supplier, in which the firm's drive will have an impact on its roles, while there is merely one source of new value creation inside the company, which is human capital.

Steenkamp [1] indicates that although global brands make strategic sense, it is not apparent in what way they create firm value. In other words, what process underlies the value creation of global brands. The strategic decisions of global brands in building global brand image and firm value are the result of consistent marketing activities. The current environment which a firm is performing in is the combination of some strategic decisions it has made on its way to globalization that is inclusive of selection and segmentation of international markets [6].

Global brands have been defined throughout different research as brands that consumers can find under the same name in multiple countries with generally similar and centrally coordinated marketing strategies [7]. Schuiling and Kapferer [8] define local brands as brands that are in one or limited geographical location, while global brands are the ones with the same marketing strategies and marketing mix in all target markets. Research shows that international brands benefit from brand equity, brand image, brand awareness, perception of brand superiority, quality, high prestige, and status; however, research on local brands indicates different results.

Delgado-Ballester and Fernandez Sabiote [9] extend the results of previous empirical studies, which proved that brand experience has an impact on satisfaction, loyalty, and brand meaning. The authors confirm other consequences of the brand experiential value, such as brand equity, consumer–brand identification, and positive word of mouth. The findings show that the influence of brand experiential value is higher on brand equity and consumer–brand identification compared to brand functional value, which means that these two variables are more developed by abstract and intangible considerations. However, positive word of mouth is highly influenced by the functional values of the brand. Therefore, the authors recommend focusing on offering higher experiential values to customers that play an essential role in the customers' responses to the marketing efforts of a brand, i.e., brand equity, and customer–brand identification.

The study of Belo, Lin, and Vitorino [10] pertinent to brand capital and firm value shows that there is a strong correlation between brand capital and average stock returns in the cross section of US publicly traded companies. Further, the authors highlight three main points. First, companies with low brand capital investment rates have higher average stock returns than businesses with high brand capital investment rates. Second, more brand capital-intensive companies have higher average stock returns than less brand capital-intensive firms. Third, investment in both brand capital and physical capital is volatile and procyclical [10]. Furthermore, Madden, Fehle, and Fournier [11] use monthly stock returns for the period of 1994–2000 to empirically validate whether brand development strategies create shareholder value. They discover that based on the valuation of Interbrand, strong brands demonstrate both statistically and economically substantial performance advantages in comparison with the general market. The results illustrate that companies with strong brands

offer more value to their shareholders at less risk through higher return on investment compared to the market benchmark, which is robust in the face of market share and industry control [11].

It can be perceived that a strong brand has an impact on the value it offers to the stakeholders. Thus, it is quite crucial to know the process of which global brands undergo to build firm value. Accordingly, this study is set to investigate the underlying process that global brands endure building firm value. Therefore, the purpose of this study is to analyze how global brands create firm value and to conceptualize a framework based on the findings.

20.2 Literature Review

20.2.1 Research Related to the Topic Under Investigation

According to Steenkamp [2], the two most essential developments in marketing that happened during the past ten years are the globalization of the marketplace and the increased significance of branding. According to Steenkamp [2, 5], there are some elements which support the global integration of markets including "falling national boundaries, regional unification, standardization of manufacturing techniques, global investment and production strategies, rapid increase in education and literacy levels, growing urbanization among developing countries, free(er) flow of information (e.g., Internet), labor, money, and technology across borders, increased consumer sophistication and purchasing power, and the emergence of global media." Furthermore, the author emphasizes the importance of branding as the lifeblood of firms for five reasons: generating market share, increasing customer loyalty, intensifying channel power, offering the potential for higher profit margins, and guarding against competitive attacks.

Holt, Quelch, and Taylor [12] refer to the work of Theodore Levitt—The Globalization of Markets—and argue that globalization is not about having homogenous markets, rather it is about the globalization of cultures. The rise of global culture is not that consumers possess the same tastes or values, but it is about the people of different locations with a conflicting point of view sharing the same conversation, which is drawn upon shared symbols. The authors declare that now conversation is about the global brands, and "global brands have become a lingua franca for consumers all over the world" [2, 12].

Edeling and Fischer [13] investigate the impact of marketing variables on firm value using 83 studies and data from North America, South America, Europe, and Asia, covering 40 years. The results reveal that most marketing firm value elasticities are positive. The findings indicate five points. First, investment in marketing is relevant. Secondly, the large magnitudes of elasticities related to marketing assets recommend that the possible growth of firm value is considerable. Thirdly, investment in brands and customer relationships are underinvested in companies. Fourthly,

it is better to combine brand and customer perspectives instead of merely focusing on just one marketing metric. Finally, different industries have heterogeneous marketing variables in terms of firm value effects.

As measured by American Customer Satisfaction Index (ACSI), O'Sullivan and McCallig [14] discover that satisfaction has a substantial influence on firm value, which was measured by Tobin's q model—a capital market-based measure of firm performance widely used in marketing research [14]. Benefiting from Tobin's q model, the authors establish a method by which marketing researchers could demonstrate the relationship between marketing assets and the company's value in the form of an earnings-based valuation model.

Steenkamp [2] argues that even though there is a massive potential for global brands in creating firm value, there have been numerous failure cases due to a lack of brand strategy adaptation to local markets. The author calls them four Fs or four Fs of failure. The first F is the failure to recognize unique, culturally grounded needs. Second F is the failure to connect with local consumers. The third F is the failure to empower local management. The final one is the failure to recognize and overcome strategic hubris.

Holt et al. [12] conduct a two-stage research project (qualitative and quantitative) and discover that consumers throughout the world associate global brands with three characteristics, including quality signal, global myth, and social responsibility. However, American values did not pretty much concern the consumers considering being assumed critical by several companies. These three factors explain more than 60% of the consumers' brand preferences, which made the authors conclude that the global dimensions of brands have a considerable impact on their value in the eyes of the consumers. They also uncover that country of origin was critical in consumers' decision-making process, but it was one-third as significant as the perceptions driven by the globalness of a brand [12].

Based on the reviewed literature, it can be declared that recognizing the source of value for global brands is an essential subject for global brands. Consequently, the following section will further clarify this issue by taking a deep dive into the two most recent models which investigate the source of value in global brands. First, the paper looks at the COMET dimension of Steenkamp [2] and then analyzes the 4V model of Steenkamp [1].

20.2.2 The COMET Dimension

Steenkamp [2] develops a framework named COMET for identifying the source of value for global brands and claims that global brands provide value to the company along consumer, organizational, marketing, economic, and transnational innovation dimensions. From the consumer point of view, many consumers prefer global brands over local brands [2-7-12-15]. Steenkamp [2] lists four prominent reasons of which describe consumers' rationale for global brand preference: perceived quality, prestige, global myth, and country of origin. Furthermore, the findings of Holt et al.

[12] and Steenkamp et al. [7] reveal that perceived quality is ranked number one (explaining around 50% of the total variation in consumers' preferences of a global brand) followed by the global myth (10–15%), prestige, and country of origin [2].

From the organization's point of view. There are several reasons which source value to global brands. First, global brands have easier and streamlined internal operations. Second, global brands have quick rollout of new products, usually using the same global brand name. Third, global brands facilitate making global competitive moves (i.e., cross-subsidization). Fourth, global brands bestow an identity to the firm. Lastly, global brands attract the best talents throughout the world by their great appeal [2].

From the marketing's point of view. There are several reasons in favor of global brands inclusive of benefiting from media spillover which promotes a consistent image, pooling marketing resources across countries that generate higher-quality marketing campaigns, and leveraging best marketing ideas developed by headquarters and a local subsidiary around the world [2].

From the economy's point of view. Global brands benefit from the economies of scale in procurement and production, which contribute in reducing the cost of goods sold and enjoy the advantage of economies of scope in research and development (R&D) and selling along with general and administrative expenses (SG&A), which save them costs locally and regionally [2].

Finally, *from the transnational innovation's point of view*, global brands can innovate by pooling the best minds to work on a single product and offer higher-quality products. Global brands are using their local markets (overseas operations) to innovate and extend product offerings to other markets and have a bottom-up innovation approach to overcome the scarcity of great ideas. Ultimately, global brands can benefit from the new concept in global research and development called frugal innovation to redefine the value proposition. Frugal innovation is "the process of reducing the complexity and cost of producing a product by removing nonessential features without compromising on basic reliability. These products may subsequently be introduced in other markets including the developed world." [2, 24].

Steenkamp [2] argues that even though consumers' preferences are the primary source of value for global brands, this is not the whole picture. Because there are consumers who do not know that the brand is global, or if they know, it is not of concern to them. Considering that, the value for global brands is generated from other sources, including organizational, marketing, economic, and transnational innovation that are usually affiliated with global brands. Accordingly, the author proposes that a global brand should not necessarily score high on all dimensions of the COMET dimension. However, a brand with low scores on all these dimensions does not have the advantage of leveraging its sources for global strengths.

In order to know which dimension is the source of value for the brand, one can use the Steenkamp COMET scorecard by answering a set of questions and plot the answers in a snake diagram, and then interpret the results using these four measurement criteria. First, if scores are larger than +5.5, it is the primary source of value for the global brand. Second, if scores are between 4 and +5.5, it is the secondary source of global brand value. Third, if scores are between 2.5 and 4, it is

not the source of global brand value. Lastly, if scores are less than 2.5, it is potentially hurting the global brand value. It is crucial to highlight that any scores below 2.5 imply that the company is not capable of leveraging that specific source productively [2, 26].

20.2.3 The 4V Model

Following obtaining insights into various sources such as academic research, business case studies, consulting, teaching, and qualitative discussion with practitioners, Steenkamp [1] develops a framework called 4V model that differentiates between valued brands, value sources, value delivery, and valued outcomes. The 4V model's interrelations can be conceptualized as a global brand value chain where the value is shaped in every following stage.

In terms of valued brands, firstly, one needs to define global brands. A generally accepted definition for global branding has not been agreed upon because of different attitudes toward its metrics, which are the company's strategy, consumer perception, and international sales [2].

Steenkamp [2] explores these three attitudes and argues that global brands, from the standardization of marketing strategies point of view, are brands that utilize similar (but not the same) brand names, positioning strategies, and marketing mixes in most of their target markets. While from the consumers' perspective, global brands are the brands that are perceived to be global and are present in multiple world regions. Additionally, from the international sales point of view, global brands are the ones with a presence in multiple regions of the world, with some specific percentage of their sales coming from outside their home country. Steenkamp [2] argues that based on AC Nielsen, the threshold is 5%, whereas Interbrand's threshold is 50%.

The abovementioned definitions are not necessarily conflicting, but they emphasize different aspects of the brand; hence, the author proposes a new definition for global brands: "A global brand uses the same name and logo, has awareness, availability, and acceptance in multiple regions of the world. It shares the same strategic principles, values, positioning, and marketing throughout the world. Although the marketing mix can vary, it is managed in an internationally coordinated manner." [2, 7] Referring to the definition, global brands, especially established ones, do not necessarily need to have the same image and positioning strategy all around the world, because the brands' image and position in the home country might be different from global markets. For example, Heineken is considered a "middle-of-the-road quintessentially Dutch beer" in the Netherlands, while in other markets, it has a "premium positioning."

20.2.3.1 Valued Brands

From the brand name's point of view, it is hard to maintain the same brand name in different target markets due to differences in the languages and the connotation and meaning of the brand name. For instance, France's Groupe Bel's soft cheese brand La Vache Qui Rit maintains the same logo, but it has different brand names in various countries because translating the French name in other languages does not make sense, i.e., The Laughing Cow in the English-speaking countries, La Vaca Que Ríe in Spanish, Die Lachende Kuh in German, and Vessiolaia Bourionka in Russian [1].

To distinguish between various types of global brands, which have been frequently recognized as a unitary category in the literature, Steenkamp [1] proposes to differentiate brands based on two distinctive features of market offerings: the price of the brand relative to the category, and the nature of the key differentiating benefits it delivers. Because global brands offer a bundle of benefits, they can be assumed as differentiating factors categorized as functional (mind) or emotional (heart), which motivates the purchase of the brand.

The dimension of the benefits with the price can be cross-classified to form the four types of valued brands, namely prestige brands, fun brands, premium brands, and value brands. Furthermore, the author defines each type of global brands and provides examples [1].

The first type is prestige brands. The customers' primary reason-to-buy is their emotional pay-off with high aspirational value. They have an appeal built on specific myths related to the country of origin or the attribution of their founder, i.e., Canali suits, Coco Chanel, Patek Philippe, and Jaguar.

The second type is fun brands. Their unique selling propositions are their emotional benefits. They are more accessible than prestige brands because of their lower price, and they appeal disproportionately to young consumers who do not want to commit to a product for a long time. Although they do not offer the best quality, part of this brand's fun is the relatively rapid rollover of products, i.e., Swatch, H&M, Zara, and Ikea.

The third type is premium brands. These brands have high price tags but outshine on functional quality. These are brands for the customer who care to have high-quality products and are willing to pay a premium price. Their unique selling proposition is a superior product performance, i.e., Audi.

Finally, the fourth type is value brands. These brands are targeted for a specific need of customers who like to obtain the best value possible. They offer the best combination of price quality, or value for money, i.e., Aldi, Carrefour, Tesco, Renault's brand Dacia, Lenovo's Medion, and Electrolux's Zanussi.

20.2.3.2 Value Sources

Steenkamp [1] argues that one can emphasize on consumer preferences for global brands—vs. Local brands—as the source of value for them. However, this can be

denied by the fact that many global brands do not promote their "globalness" because they adapt to the local market or "glocalize". The best examples are Ariel, Pampers, Pantene, or Dove. Thus, the author proposes four kinds of value sources: consumer, economic, marketing, and organizational, which are elaborated below. A strong brand preferably transcends at least in one of the sources or even more.

From the consumer sources' point of view. As described in the consumer part of the COMET dimension, many consumers prefer global brands over local brands [2-7-12-15]. Besides, as Steenkamp [2] declares, there are four prominent motives describing consumers' rationale for global brand preference: perceived quality, prestige, global myth, and country of origin. Global brands' availability and acceptance are assumed as an indication of high quality by many consumers. Accordingly, there are four main reasons for which consumers prefer global brands: high quality, associations of higher prestige, globalness (symbols of cultural ideals), and high consumer preference.

The study results of Steenkamp et al. [7] reveal that perceived brand globalness was positively associated with both perceived brand quality and prestige, which support the two factors of quality and prestige of global brands. In response to the question of Shocker, Srivastava, and Ruekert [16] about whether global brand names can bestow a source of competitive advantage for global brands, Steenkamp et al. [7] discover that perceived brand globalness might provide a substantial source of competitive advantage. This means that the higher a brand's perceived globalness, the higher is its perceived quality, prestige, and purchase likelihood.

Furthermore, Shocker et al. [16] believe that perceived quality and prestige cannot easily be copied; accordingly, these characteristics offer a more secure competitive advantage which made Steenkamp et al. [7] indicate that marketers of global brands should first emphasize on perceived quality and secondly prestige. In terms of globalness, Steenkamp [1] argues that several reasons make consumers consider global brands over local brands beyond prestige and quality. Some of the reasons are that global brands function as identification for global citizenship, and involvement medium to be part of a global world [7–12], and also using brands as symbolic signals to express the identity and quality signals [17]. In terms of higher consumer preference, some global brands generate this fondness through connection with a specific myth of foreign cultural origin [1].

Furthermore, Holt et al. [12] argue that US brands bring along the American Dream, which consumers like to join this lifestyle, and for example, the German Autobahn unlimited speed adds to the appeal of the brand. Steenkamp [1, 11] refers to the consumer sources of global brand value and the types of valued brands and declares that "Prestige brands derive value primarily from the prestige component and the specific myth of foreign cultural origin (if applicable). The global culture component plays a large role for Fun brands, while the perceived quality component is crucial for Premium brands." There is a little evidence about the very fact that the globalness of value brand adds much to the value of the brand.

From the economic sources' point of view. Global brands have some advantages compared to local brands. These include having economies of scale, benefiting from the elimination of overlap and repetition of research and development, benefiting from the group work of their best talents on a single project and offering a better

quality product, cutting the costs for setup, production runs, and inventory, and finally reducing the after-sales costs [1]. For fun brands and value brands, which their value propositions are "lower price," the economies of scale in production and procurement are critical success factors. Premium brands particularly benefit from economies of scope in research and development, because they could bring their pool of talents together to design the best quality product.

From the marketing sources' point of view. Global brands are reinforced by the economies of scope in their marketing campaigns in two ways. First, having the same marketing program across countries, global brands save time and money in terms of media spillover (more exposures per dollar spent) and advertisement exposure to consumers who travel (increasing the return on advertising dollars). Second, being global brands grant them the advantage of having a platform to produce greater marketing programs through the pool of marketing resources from different countries to develop high-quality campaigns at a reasonable cost compared to the locally produced program with the local budgets [1].

From an organizational sources' point of view. A global brand can benefit from its organizational advantages that are considered intangible and softer by marketers. There are four organizational advantages. First, when maintaining a global single brand name rather than loads of local brands, it streamlines internal operation. Secondly, a global brand accelerates the quick launch of new products, which saves the company time in branding and marketing the product internationally. Thirdly, global brands attract the most talented resources that usually identify themselves with the brand. Lastly, the global brand grants the company an identity which "serves as an organizational rallying cry" [1, 13].

20.2.3.3   Value Delivery

Steenkamp [1] scrutinizes value delivery from three directions: whom to deliver to, what to deliver, and how to deliver.

Whom to deliver to. One of the key criteria in successful sales and positioning of international brands is international market segmentation, which depending on the definition of the market involves selection and segmentation. Selection is when segmenting the world according to national country markets, whereas segmentation is done cross-nationally by classifying markets based on characteristics of consumers irrespective of the place they live [6]. Accordingly, Steenkamp [1] concludes that there are two components of segmentation: first, geographical segmentation, which is clustering countries or regions, beneficial to prestige, premium, and fun brands, second, consumer-based segmentation, which is the act of grouping a mixed set of consumers in different countries into cross-national groups that have relatively the same wants and needs, i.e., lifestyle is a useful segmentation basis for prestige and fun brands [1, 14].

What to deliver. By considering the functional and emotional attributes of global brands, there is a need for further segmentation such as conjoint analysis, perceptual mapping, means-end chain segmentation, meta-segmentation, and multilevel

segmentation and sub-segmentation of consumers to be able to see the benefits of the products delivered to them [1].

Furthermore, the author argues that the positioning of a product based on product characteristics and benefits is good, but it is not enough anymore. Therefore, the practitioners recommended using the role of culture in positioning products that assist brands in providing a point of differentiation. There are three positioning strategies: first, global consumer culture positioning (GCCP) that is positioning the brand on a set of universal values, beliefs, lifestyle, products, and symbols, second, local consumer culture positioning (LCCP) that is positioning one's brand on a set of values, beliefs, lifestyle, products, and symbols characteristic of one's country, and finally, foreign consumer culture positioning (FCCP) that entails positioning the brand on a set of values, beliefs, lifestyle, products, and symbols originating from and represented by an identifiable overseas source [1, 15].

Steenkamp [1] argues that due to the practical limitation in using this equation, different brands use different partial metrics to calculate the discounted cash flow, which can be categorized into three-valued outcomes: consumer outcomes, market outcomes, and financial outcomes. The author further proposes to use multiple-valued outcomes per classification such as trust and brand loyalty for consumer outcomes, market share and market share growth for market outcomes, and finally, price premium and profit margin for financial outcomes in order to cover each particular aspects of the brand. Translating the brand value to firm value is a topic in which marketers, practitioners, and financial managers do not agree with each other. This argument is because the value of a brand is an intangible asset, which is not presented in a balance sheet unless there is an acquisition of a new brand that is calculated as goodwill, the difference between the price paid, and the acquired brand's tangible assets like production facilities.

How to deliver. Global brands can be delivered through the global supply chain and marketing mix, which the first involves economic, cultural, and administrative arbitrage, and the second entails global integration, local adaptation, and worldwide learning [1]. Economic arbitrage is when the firm creates a marketing activity in a specific country to attain a lower cost of production. Cultural arbitrage is the benefits bestowed to brands by manufacturing in a country with a positive image in that industry. Moreover, administrative arbitrage rides on the differences in tax establishments to choose the location of the brand. In terms of global integration, one of the approaches is using marketing mix if the effects are similar across countries. If not, the localization of strategy is recommended.

20.2.3.4 Valued Outcomes

Steenkamp [1, 19] argues that, theoretically, the value of a brand is the net present value of its expected cash flows affected by three factors. These factors include the magnitude of the expected cash flow generated by the brand, the temporal distribution of expected cash flows, and the discount rate. "The discount rate is obtained by correcting the company's overall required rate of return for the brand-specific

riskiness of its cash flows." However, due to the difficulty in estimating different components of this formula, it is hard to measure the value of a brand in practice. This is evident from the variances in the brand values, in terms of the dollar value of the same brand, announced by two of the most reputable organizations: Interbrand's "Best Global Brands" and Millward Brown's BrandZ "Top 100 Most Valuable Global Brands".

The author argues that due to the practical limitation in using his proposed equation (the value of a brand is the net present value of its expected cash flows), various brands use different partial metrics to calculate the discounted cash flow. They can be categorized into three-valued outcomes: consumer outcomes, market outcomes, and financial outcomes. The author further proposes to use multiple-valued outcomes per classification such as trust and brand loyalty for consumer outcomes, market share and market share growth for market outcomes, and finally, price premium and profit margin for financial outcomes in order to cover each particular aspects of the brand. Translating the brand value to firm value is a topic in which marketers, practitioners, and financial managers do not agree with each other. This argument is because the value of a brand is an intangible asset, which is not presented in a balance sheet unless there is an acquisition of a new brand that is calculated as goodwill, the difference between the price paid and the acquired brand's tangible assets like production facilities [1].

The research shows that brand equity counts up to 35% of the valuable information to the operating income data in describing stock returns. That is why financial markets include brand value in the market capitalization of the company. Finally, Steenkamp [1] concludes that global brands are at the juncture of two critical elements of marketing, namely branding and global marketing.

Referring to the two models of Steenkamp [1, 2], it can be concluded that global brands create firm value through a process that involves both internal and external sources, which could be from consumer, organization, marketing, economic, or innovation.

20.3   Conceptual Framework

De Meulenaer, Dens, and De Pelsmacker [18] discover that advertising copy is the most fundamental feature to signify globlaness. It further emphasizes that the reciprocal significance of the brand name, the spokesperson, and the brand logo are dependent on the category of the product and the culture of the consumer.

The authors realize that central cues, such as advertising copy and brand name, are more crucial for global-minded consumers under the high-involvement product categories. In contrast, the peripheral cues like spokesperson and brand logo are more critical for the local-minded individuals under the low-involvement product categories [18].

Their finding confirms that positioning a brand as a global brand is carried out by segmenting based on consumer characteristics using various approaches, which

is dependent on the product category. Projecting the globalness can be performed by underlining the global availability and reach. At the same time, the localness of a brand can be performed by local relevance through advertising copy, regardless of the category of the product or the culture of the consumer. In terms of targeting global-minded consumers for the high-involvement product categories, one should also consider positioning the spokesperson globally, and when targeting local-minded consumers for the low-involvement product categories, it should localize the name of the brand [18].

Gordon, McKeage, and Fox [19] argue that the involvement can be related to a buying decision, a product category, a brand, or marketing communication. Product involvement comprises a constant commitment on the part of the consumer pertinent to thoughts, feelings, and behavioral responses to a product category. The previous studies specify that involved individuals would be motivated to focus on the information about the object of their involvement [19].

Consequently, in this study, a conceptual model is created for positioning a brand in the consumer's mind. The proposed model in Fig. 20.1 is constructed based on the findings of De Meulenaer et al. [18], which demonstrate that positioning can be based on the product category and the product involvement, low or high. It also considers the categorization of the four types of brands by Steenkamp [1]. This model can assist firms in selecting the best positioning of their brands in the minds of their consumers based on three main characteristics: price, benefits, and involvement. The price of the brand is divided into three categories: low, medium, and high. The range of benefits, which a brand offers to its customers, is classified into functional and emotional. Finally, the level of product involvement is formed along with three classes of high, medium, and low. Based on this grid, global brands can align their marketing strategies to position their brands properly in the consumers' minds.
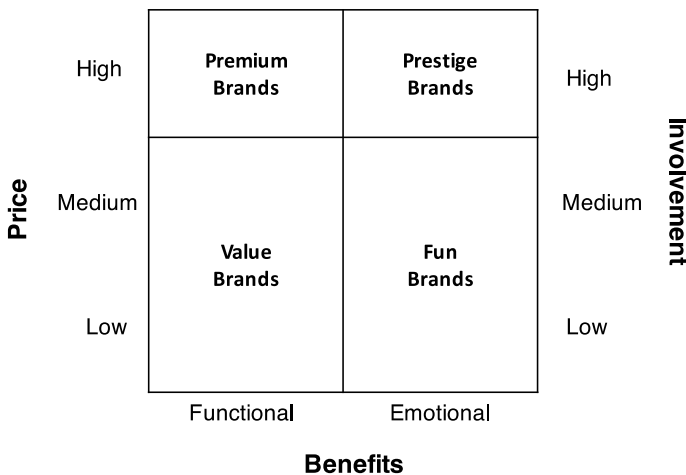
Fig. 20.1 Positioning brand in consumers' minds

By extending Steenkamp's [1] proposition to differentiate brands based on two distinctive features of market offerings, the price of the brand relative to the category, another dimension is added to the model to be able to measure the product involvement. The dimensions of the benefits, including price and involvement, can be cross-classified to form the four types of the positioning of brands: prestige brands, fun brands, premium brands, and value brands. The characteristics of each type of brands are the same as discussed earlier in the literature.

After the decision to select the positioning of the brand in consumers' minds, the second step is to identify and target the source of value, which could be consumer, economic, marketing, organizational, or human capital.

Four components of this step, consumer, economic, marketing, and organizational are from Steenkamp [1], and the last one, human capital, is added based on the findings of Bowman and Ambrosini [5].

The third step is delivering the value by considering the best approach to select the recipient of value, the value itself, and the method of delivery. The final step is harvesting the value, which could be tangible such as the return on investment in terms of market share, growth, profit margin, or intangible assets like brand image, trust, and loyalty. The combination of these four steps creates firm value presented in Fig. 20.2 in the following page. Creating firm value is a long process that requires a comprehensive collaboration between the internal and external stakeholders of the company.

Since the proposed conceptual model to create firm value in Fig. 20.2 is an extension of the 4V model of Steenkamp [1], and because its sub-components are thoroughly elaborated in the abovementioned literature, further explanations about the elements of the model are not discussed.
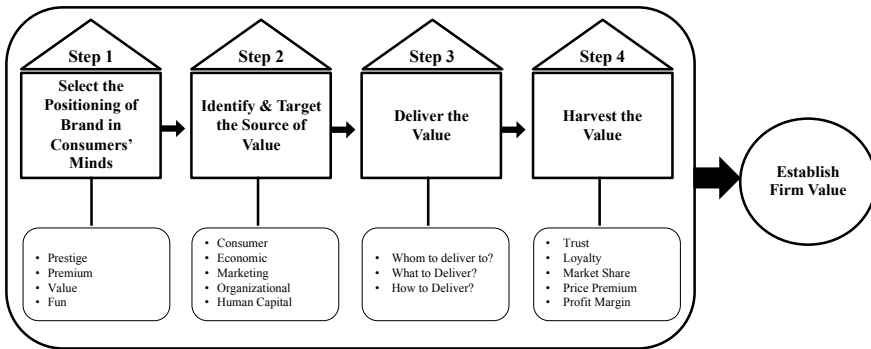
Fig. 20.2 Conceptual framework: process of creating firm value

20.4   Expected Contribution

From the theoretical point of view, this study looks at the two main models proposed by Steenkamp [1, 2] and proposes a new model. The "Process of Creating Firm Value" model covers the underlying process of value creation in firms. The four steps in the firm value creation include selecting the positioning of the brand in the consumers' minds, identifying and targeting the source of value, delivering the value, and finally, harvesting the value. The proposed model indicates the process of creating value in global brands, which is a course of action that involves both internal and external stakeholders of the company, from human resource, marketing, operation, and production, to supply chain and branding.

From the managerial point of view, the paper assists brand managers to find the positioning of their brands in the consumers' minds based on the defined dimension. It also enables them to set the marketing activities in line with the positioning of the brand. Furthermore, it facilitates the process to uncover the source of value in global brands and coordinate the activities among the brand's internal and external stakeholders to deliver the promise of the brand, and eventually, create a substantial and robust firm value, which is beneficial to all stakeholders.

20.5   Conclusion

This study presents the details of Steenkamp's 4V model and COMET dimension that investigate the source of value in global brands. It proposes a conceptual framework to create firm value in global brands and intends to identify its process. Since global brands are the prominent market players in every industry throughout the world, they perform various marketing activities to maintain their market positioning and market share. The outcome of these activities and the underlying process is having a strong firm value, which can be translated into financial returns.

As discussed, the tangible and intangible value of the firm is the result of the cooperation between the internal and external stakeholders of the firm. The final output of all these activities is a value that consumers put on the global brands that usually is assumed as an intangible asset of the company.

20.6   Limitation and Future Research

Although this research extensively studies how global brands create firm value, the limitation could be its dedicated focus, which was mainly on two models of Steenkamp [1, 2]. This paper explores the area of global brand value creation through the process introduced by Steenkamp. It has a detailed theoretical systematization of the Steenkamp's 4V model and COMET dimension. However, it does not present the

details about how to implement the framework. Because the scope of this research does not cover any fieldwork or empirical work to support the proposed model.

Consequently, future research can empirically test the process of creating firm value model along with the 4V models of Steenkamp and COMET dimension [1, 2]. Future research could be a cross-country examination of a global brand's approach in creating firm value using the process described above. In order to narrow down the scope of research, it is recommended to focus the investigation of a global brand on a specific industry to be able to have reliable results that can be extended to other industries.

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Chapter 21
Implementation of High-Level JSON Schema Change Operations Using JUpdate

Zouhaier Brahmia, Safa Brahmia, Fabio Grandi, and Rafik Bouaziz

Abstract Currently, JSON and JSON Schema languages are being widely used by NoSQL database designers, administrators and application developers. However, there is neither a standard JSON update language (like the XQuery Update Facility language in the XML world), nor a standard JSON Schema change language (like the SQL-DDL language in the relational setting). For that reason, we proposed in (Brahmia et al.: JUpdate: A JSON Update Language. Submitted for Publication, 2019) a JSON instance update language, named JUpdate, and in (Brahmia et al. in Int. J. Cloud Comput. 10(5–6), 2021) a JSON Schema change language. Each one of these languages consists of a complete set of high-level operations. Moreover, in (Brahmia et al. in JUpdate: A JSON Update Language. Submitted for Publication, 2019), we introduced a complete and minimal set of low-level JSON instance update operations, which were used to define the semantics and to provide a basis for the implementation of the high-level JSON instance update operations of JUpdate. In this work, owing to the fact that a JSON Schema file is also a plain JSON file, we use the high-level JSON instance update operations of JUpdate to define the semantics and to provide a basis for the implementation of the high-level JSON Schema change operations of our language previously presented in (Brahmia et al. in Int. J. Cloud Comput. 10(5–6), 2021).

Z. Brahmia (✉) · S. Brahmia · R. Bouaziz
University of Sfax, Sfax, Tunisia
e-mail: zouhaier.brahmia@fsegs.rnu.tn

S. Brahmia
e-mail: safa.brahmia@gmail.com

R. Bouaziz
e-mail: rafik.bouaziz@usf.tn

F. Grandi
University of Bologna, Bologna, Italy
e-mail: fabio.grandi@unibo.it

21.1   Introduction

Nowadays, several applications, like online social networks, Internet of things and cloud computing applications, are exploiting NoSQL databases [1–6] to store and manage big data [7–11]. The JSON format [12] and the JSON Schema language [13] are being widely used by NoSQL database designers, administrators and application developers. Nevertheless, there is neither a standard/consensual JSON update language, like the XQuery Update Facility language [14] in the XML world, nor a standard/consensual JSON Schema change language, like the SQL Data Definition Language (DDL) in the relational setting. Advanced applications also require the management of temporal and multi-version data in order to cope with the evolutionary nature of the modeled reality.

The τJSchema (Temporal JSON Schema) [15, 16] framework (a data model and a suite of tools) allows NoSQL database administrators (NSDBA) to create time-varying JSON documents [17] and validate them against a temporal JSON schema. This latter is defined through the annotation of a conventional JSON Schema (i.e., a standard JSON Schema file) with a set of temporal logical characteristics, which specify which component can vary over time, and temporal physical characteristics, which specify how the temporal aspects are represented.

Since τJSchema, in its initial version, supports only JSON instance versioning and since schema changes are unavoidable, we have extended our framework to also support schema versioning [18–20]: In [21], we have dealt with conventional JSON Schema versioning, and in [22] we have focused on temporal characteristics versioning. Moreover, since in [21] and [22], we have only proposed low-level schema change operations, which are not very user-friendly for NSDBA because they are too primitive, we have provided in [23] three sets of high-level operations for changing conventional JSON schemas, temporal characteristics and temporal JSON schema.

Besides, since there is no standard or consensual language for updating JSON instance documents, we have proposed a complete and minimal set of low-level JSON instance update operations and used them to define the semantics and provide a basis for the implementation of our high-level JSON instance update language, named JUpdate [24]. In this paper, owing to the fact that a JSON Schema file is also a plain JSON file, we use such a low-level update operation set to define the semantics and provide a basis for the implementation of the high-level JSON Schema change language presented in [23]. Moreover, in our high-level JSON Schema change operations, we propose the use of path arguments (which are valid JSONPath [25] expressions) that reference the paths in the JSON instance documents instead of using path arguments that directly reference the paths in the JSON Schema documents, in order to have paths less verbose and to simplify the use of high-level schema change operations by end users who are familiar with JSON but do not know in detail the JSON Schema syntax.

The rest of the paper is organized as follows. Section 21.2 shows how our high-level JSON Schema change operations can be implemented through the use of the

low-level JSON instance update operation set. Section 21.3 presents an application example that illustrates the functioning of our proposal. Section 21.4 provides a summary of the paper and some remarks about our future work.

21.2 Implementation of High-Level JSON Schema Change Operations

In this section, we deal with the implementation of high-level JSON Schema change operations previously proposed in [23], based on the high-level operations of our JUpdate language [24].

Notice that in [23] we used path arguments directly referencing the paths in the JSON Schema documents. In this current work, we propose the use of path arguments referencing the paths in the JSON instance documents instead. Indeed, the motivation of our proposal is that, in this way, high-level schema change operations can be easily used also by end users who are familiar with JSON but do not know in detail the JSON Schema syntax and the paths to be used become less verbose. To illustrate this aspect, consider the following JSON instance document (JID1.json):

```
{ "employees": [
   { "empName": "Mahdi Hamid",
     "empContact":
      { "empTel": "9955773311",
        "empEmail": mahdi.hamid@gmail.com
      } } ] }
```

that is conformant to the following JSON Schema document (JSD1.json):

```
{ "employees":
   { "type": "array",
     "items":
      { "type": "object",
        "properties":
        { "empName": { "type": "string" },
          "empContact":
           { "type": "object",
             "properties":
              { "empTel": { "type": "string" },
                "empEmail": { "type": "string" }
              } } } } } }
```

Then, assume that we want to add an "address" to "empContact". With our high-level JSON Schema change language [23], this can be done as follows:

```
AddProperty(JSD1.json,
   $.employees.items.properties.empContact.properties,
   address, string)
```

where the path argument directly refers to the schema definition in JSD1.json. However, we think that it would be more natural to specify paths with reference to the JSON instance document file that is as follows:

```
AddProperty(JSD1.json,
   $.employees[*].empContact, address, string)
```

To this purpose, we introduced a translation function that maps a JSON instance path to the corresponding JSON Schema definition path. The definition of such a function, named **convertPath()**, is listed as Algorithm 1. For example, the result returned by the call:

```
convertPath($.employees[*].empContact.empTel)
```

is the schema path:

```
$.employees.items.properties.empContact.properties.empTel
```

Due to space limitations, we consider only a subset of these high-level operations and precisely those which act on objects' properties (their total number is eight): **AddProperty**, **DropProperty**, **MoveProperty**, **CopyProperty**, **RenameProperty**, **ReplacePropertyWithNewProperty**, **ExchangeProperties**, and **SplitPropertyIntoProperties**. The semantics of each one of these operations is defined by mapping it onto a sequence of low-level update operations, as shown in algorithms 2, 3, 4, 5, 6, 7, 8 and 9, respectively.

Algorithm 1 Semantics of the **convertPath** function

```
Function convertPath(Path)
Begin
  For each '[*]' in Path: Replace it with '.items';
  For each '.' in Path: Replace it with '.properties.';
  Return Path;
End
```

Algorithm 2 Semantics of the **AddProperty** high-level operation

```
AddProperty(CJS.json, targetObjPath, propertyName,
            propertyType)
Begin
  Path := convertPath(targetObjPath)+'.properties.';
  InsertMember(CJS.json, path, propertyName,
               propertyType);
End
```

Algorithm 3 Semantics of the **DropProperty** high-level schema change operation

```
DropProperty(CJS.json, propertyPath)
Begin
  path := convertPath(propertyPath);
  DeleteMember(CJS.json, path);
End
```

Algorithm 4 Semantics of the **MoveProperty** high-level schema change operation

```
MoveProperty(CJS.json, propertyPath, targetObjPath)
Begin
  from := convertPath(propertyPath);
  to := convertPath(targetObjPath)+'.properties.';
  MoveMember(CJS.json, from, to);
End
```

Algorithm 5 Semantics of the **CopyProperty** high-level schema change operation

```
CopyProperty(CJS.json, propertyPath, targetObjPath)
Begin
  from := convertPath(propertyPath);
  to := convertPath(targetObjPath)+'.properties.';
  CopyMember(CJS.json, from, to);
End
```

Algorithm 6 Semantics of the **RenameProperty** high-level schema change operation

```
RenameProperty(CJS.json, propertyPath, newPropertyName)
Begin
  path := convertPath(propertyPath);
  RenameMember(CJS.json, path, newPropertyName);
End
```

Algorithm 7 Semantics of the **ReplacePropertyWithNewProperty** high-level schema change operation

```
ReplacePropertyWithNewProperty(CJS.json,
      oldPropertyPath, newPropertyName, newPropertyType)
Begin
  path := convertPath(oldPropertyPath);
  Let objPath such that path=objPath.properties.pName;
                 // pName is the name of oldProperty
  InsertMember(CJS.json, objPath, newPropertyName,
             newPropertyType);
  DeleteMember(CJS.json, path);
End
```

Algorithm 8 Semantics of the **ExchangeProperties** high-level schema change operation

```
ExchangeProperties(CJS.json, property1Path,
                   property2Path)
Begin
  path1 := convertPath(property1Path);
  path2 := convertPath(property2Path);
  Let objPath1 such that
              path1=objPath1.properties.p1Name;
                    // p1Name is the name of property1
  Let objPath2 such that path2=p2.properties.p2Name;
                    // p2Name is the name of property2
  CopyMember(CJS.json, path1, objPath2);
  MoveMember(CJS.json, path2, objPath1);
  DeleteMember(CJS.json, path1);
End
```

Algorithm 9 Semantics of the **SplitPropertyIntoProperties** high-level schema change operation

```
SplitPropertyIntoProperties(CJS.json, propertyPath)
Begin
  path := convertPath(propertyPath);
  Let objPath such that path=objPath.properties.pName;
                  // pName is the name of property
  For each sub-property sp, having a name pName and a
          type pType, of the property located at
          propertyPath do:
    InsertMember(CJS.json, objPath, pName, pType);
  End For
  DeleteMember(CJS.json, path);
End
```

21.3 Application Example

To illustrate our proposal, let us consider the example of a Tunisian cultural organization that uses a JSON NoSQL database for managing the data of its members. Suppose that on January 10, 2020, the NSDBA created the first version of the JSON Schema of the members, as shown in Fig. 21.1, in which each member is described by a number, a first name, a last name, a birthday and an address that is characterized by a street, a city, a state and a country. Figure 21.2 shows an extract of the first version of the JSON instance document that is conformant to the first JSON Schema version and that was created at the same date.

After that, assume that on February 14, 2020, the NSDBA decided to change the JSON Schema of members by adding "Zip code" to address, renaming "birthday" to

```
{ "type": "object",
  "properties": {
    "firstName": { "type": "string" },
    "lastName": { "type": "string" },
    "birthday": { "type": "string", "format": "date" },
    "address": {
      "type": "object",
      "properties": {
        "num": { "type": "number" },
        "street": { "type": "string" },
        "city": { "type": "string" },
        "country": { "type" : "string" }
      } } } }
```

Fig. 21.1 First version of the JSON Schema of the organization's members (organizationMembers_JSONSchema_V1.json) on 2020–01–10

```
{ "firstName": "Ahmad",
  "lastName": "Khalil",
  "birthday": "10-06-1996",
  "address": {
    "num": 17,
    "street": "Road of the Revolution",
    "city": "Alim",
    "country": "Tunisia" } }
```

Fig. 21.2 Extract of the first version of the JSON instance document of the organization's members (organizationMembers_JSONInstances_V11.json) on 2020–01–10

"birthdate" and removing "country" (since all members of the organization should live in Tunisia). To do so, he/she specifies, on his/her JSON Schema change interface, the following sequence of high-level JSON Schema change operations [23]:

```
Begin Transaction
AddProperty(organizationMembers_JSONSchema_V1.json,
    $.address, ZipCode, string)
RenameProperty(organizationMembers_JSONSchema_V1.json,
    $.birthday, birthdate)
DropProperty(organizationMembers_JSONSchema_V1.json,
    $.address.country)
Commit
```

Each one of the three high-level JSON Schema change operations, specified by the NSDBA in the above schema change transaction, could be implemented through a sequence of high-level JSON instance update operations, according to the corresponding algorithm defined in the previous section. Thus, by applying the suitable algorithms, the above transaction becomes as follows:

```
Begin Transaction
/* Implementation of the AddProperty() high-level schema
   change operation */
InsertMember(organizationMembers_JSONSchema_V1.json,
    $.properties.address.properties, ZipCode, string)
/* Implementation of the RenameProperty() high-level schema
   change operation */
RenameMember(organizationMembers_JSONSchema_V1.json,
    $.properties.birthday, birthdate)
/* Implementation of the DropProperty() high-level schema
   change operation */
DeleteMember(organizationMembers_JSONSchema_V1.json,
    $.properties.address.properties.country)
Commit
```

As a result of this schema change transaction, the system generates (i) the second version of the JSON Schema of the members, as shown in Fig. 21.3, from the first JSON Schema version (see Fig. 21.1) and (ii) the second version of the JSON instance document (from the first JSON instance document version). Notice that this latter is conformant to the second JSON Schema version. Figure 21.4 shows an extract of it. Changes are presented in red bold type, as shown in Figs. 21.3 and 21.4.

```
{ "type": "object",
  "properties": {
    "firstName": { "type": "string" },
    "lastName": { "type": "string" },
    "birthdate": { "type": "string",
                   "format": "date" },
    "address": {
      "type": "object",
      "properties": {
        "num": { "type": "number" },
        "street": { "type": "string" },
        "city": { "type": "string" },
        "ZipCode": { "type" : "string" }
      } } } }
```

Fig. 21.3 Second version of the JSON Schema of the organization's members (organizationMembers_JSONSchema_V2.json) on 2020–02–14

```
{ "firstName": "Ahmad",
  "lastName": "Khalil",
  "birthdate": "10-06-1996",
  "address": {
    "num": 17,
    "street": "Road of the Revolution",
    "city": "Alim",
    "ZipCode": null } }
```

Fig. 21.4 Extract of the second version of the JSON instance document of the organization's members (organizationMembers_JSONInstances_V21.json) on 2020–02–14

21.4 Conclusion and Future Work

In this paper, we have provided a basis for the implementation of a subset of our high-level JSON Schema change operations previously introduced in [23]. Each considered operation has been mapped onto a sequence of JUpdate operations proposed in our previous work [24].

To show the feasibility of our proposal, we plan to implement these high-level operations, within the extension of our τJSchema-Manager tool to support schema versioning [18–20] in the τJSchema framework [21–23, 26, 27].

Furthermore, since in this paper we have focused only on basic high-level operations (for changing conventional JSON schemas) dealing with properties, we intent to extend our approach by also dealing with the other basic (e.g., MoveKeyword, CopyKeyword) and complex (e.g., CreateConventionalJSONSchemaByExtraction, MergeConventionalJSONSchema) high-level schema change operations previously proposed in [23].

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Part VIII
Machine Learning Applied to Marketing

Chapter 22
Predicting Customer Engagement Behaviour with Pharmacy Brands on Facebook Using Decision Tree

Eglė Vaičiukynaitė, Ineta Žičkutė, Viktorija Varaniūtė, and Justas Šalkevičius

Abstract Customers are increasingly using various social media platforms to search for information about brands and to socialise. Facebook is the most popular platform. Hence, an understanding of customer engagement behaviour (CEB) with different content and media types of brand posts on Facebook is essential for companies, especially for achieving information dissemination among current and potential customers, for driving sales and growing brand community. This paper aims to predict CEB based on content and media types of pharmacy brands on Facebook. The research applied descriptive analysis, ANOVA and a machine learning decision tree classification method. The data are collected from four selected Lithuanian pharmacy brands. The findings indicate that the most popular content types of pharmacy brands are informational or pertaining to remuneration and educational content about pharmacy products. Based on machine learning decision tree results, customers express their engagement with informational, educational and social posts accompanied by images and logos. Several future research directions are included.

22.1 Introduction

Recently, social media usage is increasing among both companies and customers, and essential customer engagement activities are a priority for companies. A better understanding of customer engagement behaviour (CEB) on Facebook might empower companies not only to improve their social media marketing strategy in promoting

E. Vaičiukynaitė · I. Žičkutė (✉) · V. Varaniūtė · J. Šalkevičius
Kaunas University of Technology, K. Donelaičio St. 73, 44249 Kaunas, Lithuania
e-mail: ineta.zickute@ktu.lt

E. Vaičiukynaitė
e-mail: egle.vaiciukynaite@ktu.lt

V. Varaniūtė
e-mail: viktorija.varaniute@ktu.lt

J. Šalkevičius
e-mail: justas.salkevicius@ktu.lt

products and services but also to enable them to plan their budget, tailor their communication strategy and increase their company's performance. Considering what motivations customers have to use, social media platforms, such as Facebook, are needed. It is also necessary to take into account not only short-term company goals, such as cost reduction and sales increases in the next month by using Facebook campaigns, but also the long-term returns, such as customer engagement, brand awareness and eWOM communications [1].

Importantly, the Marketing Science Institute (MSI) 2018–2020 has called for enhanced researcher attention on better strategies to drive customer engagement with a company and thus on how to use artificial intelligence (AI) for effective advertising and customer engagement [2]. These issues will play a profound effect on future social media marketing. However, there is a need to investigate drivers of CBE on brands' posts on Facebook.

Previous studies have analysed various features of brand posts on CEBs on Facebook from diverse industries such as apparel, airlines, energy, fast-moving consumer goods (FMCG), restaurants, hotels, beverages (i.e. Starbucks, Johnnie Walker) and fashion brands [3–6, 15]). Importantly, the pharmacy industry was ignored in the academic literature due to the lower presence of pharmacy brands on social media platforms. Indeed, one reason for this might be the strict rules and regulations related to pharmaceutical products. Secondly, pharmacy brands might use traditional channels such as a pharmacy store, special newsbooks, newsletters or even their websites. Therefore, pharmacy brands need to enhance their social media communication strategies through diverse types of brand post features, including media types, content types on Facebook and so on to achieve their goals.

Therefore, to address the aforementioned issues, the main purpose of this research is to predict CEB (e.g. likes, shares, comments and emotional reactions) based on features (i.e. content and media type) of pharmacy brands on Facebook.

22.2   Theoretical Background on the Drivers of Customer Engagement Behaviour with Pharmacy Brands on Facebook

Recently, customer engagement behaviour, or CEB, has been widely investigated by academics [7–11], but there is still no general agreement about its definition and conceptualisation. Hence, the term "customer engagement" might be defined and conceptualised differently, either as a behavioural construct only or as a psychological state.

In line with the behavioural perspective of engagement, CEB is defined as "*a customer's behavioural manifestations that have a brand or firm focus, beyond purchase, resulting from motivational drivers*" [11] and conceptualised as a unidimensional construct. For instance, CEB might include various customer actions such as liking or commenting on a brand message on Facebook. In a similar vein, [10]

based on the consumers' online brand-related activities (COBRAs) framework, one can classify all consumer behavioural activities on social media into three levels of behaviour: contribution, consumption and creation of brand-related content.

While, a psychological state perspective of engagement is defined as "*a customer's motivationally driven, volitional investment of focal operant resources (including cognitive, emotional, behavioural and social knowledge and skills) and operand resources (e.g. equipment) into brand interactions in service systems*" [12].

Moreover, this conceptualisation indicates a multidimensional concept and can include several dimensions such as emotional, cognitive and behavioural responses. Finally, the conceptualisation of customer engagement can include a subject and an object; thus, it depends on the context and may occur in a consumption-related context that is beyond purchase [11, 13].

Consistent with [14] and [4], the current study uses a behavioural approach and has operationalised it as customer active reactions on Facebook: likes, comments, shares and emotional reactions, such as love, sad, haha, angry and wow.

Concerning drivers of CEB on Facebook, diverse features of brand posts such as media type (i.e. image, link, video) and content types (e.g. informational, social) play a key role in brand communication strategies. In general, a brand-generated post strategy involves two dimensions, "*what to say*" and "*how to say it*" [3]. Indeed, "*what to say*" indicates the post's content, while "*how to say it*" deals with the media types used in the posts (e.g. image, video, weblinks). Moreover, the academic literature suggests that there is no common ground in conceptualising the major types of brand post content on Facebook. For instance, [15] have proposed twelve content types and classified them into three types of contents, such as informational (e.g. brand product), transformational (e.g. social responsibility post) and interactional (e.g. brand community), while another stream of research has used only two major types of posts, such as sales/marketing and conversational posts [16]. Recently, Facebook has launched an opportunity for companies to post job offers [19]. Nevertheless, to the best of our knowledge, there is no empirical academic research about the content types of pharmacy brands. Therefore, consistent with the aforementioned studies, this research integrates a broad set of content types from diverse industries (e.g. retail, apparel, airlines, hotels, restaurants) and distinguishes it into informational, entertainment, social, educational content, content related to remuneration, social responsibility, user-generated content and job offers. Consistent partly with [3], media types of brand posts include images, videos, links and other types.

Different brands' post strategies might generate different CEB (e.g. likes, shares) on Facebook. For example, the image posts of hotel brands were considered to be the most effective media type to stimulate the largest number of customer likes, comments and shares on Facebook [3]. Moreover, the results indicate that product, brand and involvement posts were the most effective in comparing information, reward and promotion posts [3]. Importantly, the content types of hotel communication on Facebook may differ because pharmacy brands can seek to educate their customers on how to use a medical product. As [20, 21] suggest, pharmacies should take advantage of Facebook platform opportunities for their targeted campaigns to connect patients and colleagues and to promote their pharmacy services.

Due to the limited amount of empirical research that has investigated customer behavioural responses to pharmacy brand posts on Facebook, we formulated two research questions.

Given the rationale for this literature review, the following research questions are proposed to identify an area of interest for this research:

RQ1: What kind of content and media types of posts do pharmacy brands publish on Facebook?

RQ2: Is there any relationship between different content and media types of pharmacy brand posts (e.g. informational, entertainment, social, related to remuneration) and CEB (e.g. likes, shares, comments and emotional reactions) on Facebook?

22.3   Research Methodology

In accordance with the literature review, we explored different strategies of CEB on pharmacy brands theoretically. The main purpose of this research was to predict CEB (e.g. likes, shares, comments) based on content and media types of pharmacy brands on Facebook. Therefore, the nature of the research is explanatory, which involves inductive access and an interpretive perspective. The research strategy was divided into three parts: descriptive analysis, ANOVA and a machine learning decision tree classification method. The detailed research methodology is presented in the following manner: (1) the setting of the sample, (2) the explanation of the data collection and (3) the explanation of the data analysis.

The Setting of the Sample. Researching CEB on pharmacy brands in Lithuania has become essential because the pharmacy industry is huge. Currently, there are about 1,300 pharmacies operating in Lithuania [17].

Four Lithuanian pharmacy brand Facebook pages were selected for this study. The selection of these brands was based on several criteria. Firstly, the selected brands had an official brand page. Secondly, all brands were active brand pages and had the greatest number of fans and followers on Facebook [3].

It can be noticed that the biggest number of people who like the pharmacy brand's Facebook page was 84,252 for *Pb4*, and the least number of people was 30,808 for *Pb1* (see Table 22.1). The same trends were observed in the number of followers who followed the pharmacy brand's Facebook page.

Data Collection. All posts published on Facebook for the four pharmacy brands were collected during a one-year period from 25 June 2018 and in reverse order. All feature posts were involved CEB (i.e. likes, shares, comments or emotional reactions), and media and content types were extracted. Besides, the CEB index consisting of likes, comments, shares and particular coefficients (adopted from [18]) was calculated (see Eq. 22.1).

$$EI_p = Likes_p + Comments_p \times 2 + Shares_p \times 3, \tag{1}$$

Table 22.1 Sample of pharmacy brand Facebook pages

Pharmacy brand	No. of people who like this[1]	No. of people who follow this[1]
Pharmacy brand 1 (Pb1)	30,808	30,653
Pharmacy brand 2 (Pb2)	39,950	39,517
Pharmacy brand 3 (Pb3)	36,607	36,331
Pharmacy brand 4 (Pb4)	84,252	82,469

[1]The people (liked/followed) number data were collected from Facebook.com on 28 June 2018

where EI_p = customer engagement index of post p, $Likes_p$ = number of likes of post p, $Comments_p$ = number of comments of post p, $Shares_p$ = the number of shares of post p.

Data Processing. Adopted from previous academic studies [4–6, 15, 16] and Facebook [19], the coding variables involved ten content types (e.g. informational, social, promotional) and four media types (i.e. photo, video, links) of brand posts (see Table 22.2). Informational posts contained information about the company's products and services and thus could entail a comparison of their features and benefits. On the contrary, entertainment posts did contain fun content which was not related to a brand product or a service and did entertain viewers [4]. Social brand posts can involve various questions or statements to encourage interactions with users, provide them with the opportunity to react to a post and facilitate further the interaction [4]. Also, these posts can present companies' employees, hobbies and achievements [15].

Educational posts enable users to acquire new knowledge and skills on how to use diverse products or get special "do it yourself" tips [15]. Remuneration posts involve specific deals offered by the company/brand, offers and promotional quizzes, which engage users differently in comparison with informational or social media posts. Social responsibility posts can be defined as cause-related brand posts [15]. These brand posts entail various socially responsive programmes supported by companies or brands, such as energy consumption, carbon footprints and sustainable consumption. For instance, companies can seek to minimise plastic packages in their stores and replace with more sustainable materials. These initiatives can facilitate customers to support them [15]. User-generated content represents any type of media and content created by users, not brands. The final content type is job offers or a job advertisement generated by the company or brand that provides information about job possibilities. Facebook (2020) [19] for business suggests that businesses can reach their audience and acquire information about their potential candidates quickly for free. Finally, consistent with previous findings [15], this research applied an approach by which the aforementioned content types can be blended or mixed.

Table 22.2 Codes of the variables and descriptive statistics

Variables	Codes	Frequency (units)	Percent
Content type	1 = Informational	216	18.7
	2 = Entertainment	0	0
	3 = Social	83	7.2
	4 = Related to remuneration	574	49.6
	3/4 = Social + Remuneration	10	0.9
	5 = Social responsibility	35	3.0
	6 = User-generated content	3	0.3
	7 = Educational about *beauty* products	6	0.5
	8 = Educational about *pharmacy* products	228	19.7
	9 = Job offers	3	0.3
Media type	1 = Photo	849	73.3
	2 = Video	87	7.5
	3 = Weblinks	179	15.5
	4 = Graphic image	43	3.7
Logo	1 = Yes	683	59.0
	0 = No	475	41.0
Human	1 = Yes	675	58.3
	0 = No	482	41.7

Consistent partly with [3], the media type of brand posts was identified as photo, video, weblink and other. The other type involved graphical images. Theoretically, all media types of posts are classified based on the level of vividness. For instance, a video has a high level of vividness, while an image can have a medium level of vividness. There is a distinction between the image (i.e. photo) and graphic (i.e. pictorial) image. The latter contains a low level of vividness in comparison with a photo. Therefore, these two types of images were classified into distinct groups. Features of the post such as the use of a logo and the existence of a human are indicated as well. Therefore, this study avoids some discrepancies that might exist with coding (subjective) results. Before conducting an ANOVA analysis of pharmacy brands on Facebook posts, data were carefully cleared of discrepancies (such as missing values, mistakes in manual coding), leaving a total of 1,158 posts for the analysis. Codes of the variables are presented in Table 22.2.

Data Analysis. The data were analysed using SPSS Statistics Version 24 in several steps. Firstly, the descriptive statistics were performed for all pharmacy brands, particularly, descriptive statistics of media and content type by diverse pharmacy brands and descriptive statistics of customer engagement across diverse pharmacy brands.

Secondly, in order to normalise the data between pharmacies, the number of fans was used (see Eq. 22.2).

$$\text{ReactionsPer} K_p = \text{Likes (or other)}_p \div \left(\text{Fans}_{\text{ph}_{x=1,2,3,4}} \div 1000\right), \quad (2)$$

where $\text{ReactionsPer} K_p$ = reactions (such as customer engagement index, likes, shares, comments or emotional responses) per thousand fans of post p, $\text{Likes (or other)}_p$ = number of likes (or others, such as customer engagement index, likes, shares, comments or emotional responses) of post p, $\text{Fans}_{\text{ph}_{x=1,2,3,4}}$ = the number of fans following the particular pharmacy brand x, i.e. 1, 2, 3, 4 (see Table 22.1).

Thirdly, the study utilised the ANOVA analysis to compare the relationship between different media types of posts and CEB on Facebook brand pages. Besides, one example using the machine learning decision tree classification method is provided and explained.

Lastly, the results were summarised by indicating further research directions.

22.4 The Main Finding of the Research

22.4.1 Results of the Descriptive Analysis of Pharmacy Brand Posts on Facebook

A total of 1,171 posts were collected from four selected pharmacy brands on Facebook during a one-year period. During this period, the biggest number of posts was published by *Pb4* (502), followed by *Pb2* (275), whereas the smallest number of posts was published by *Pb3* (167), followed by *Pb1* (227).

Regarding **media type** of *Pb1* posts, the majority of posts were with images or photos (69.2%; 157), followed by weblinks (17.2%; 39). In a similar vein, *Pb2*, *Pb3* and *Pb4* posted the greatest number of posts with photos, followed by posts with weblinks. Importantly, the least number of posts was those accompanied by graphic styled pictures among *Pb1*, *Pb2* and *Pb3*. Meanwhile, *Pb4* published the least number of posts accompanied by video (5.2%; 26).

The summary statistics of four pharmacy brand posts showed that the majority of posts were accompanied by photos or images (73.3%; 858), followed by weblinks (15.3%; 179). The smallest number of posts was with video (7.5%; 88) and graphic images (3.9%; 46). Concerning **content types** of pharmacy brand posts, the most popular content types were informational (18.7%; 216), related to remuneration (49.6%; 574) and educational about pharmacy products (19.7%; 228) (see Table 22.2).

Regarding **CEB on Facebook** of all pharmacies' posts, the majority were liked (*Pb1* mean 84.12; *Pb2* mean 137.98; *Pb3* mean 136.08), followed by commented on (*Pb1* mean 10.08; *Pb2* mean 129.07; *Pb3* mean 6.19) (see Fig. 22.1). In contrast, *Pb4* posts were commented on (mean 40.43), followed by posts that were liked (mean 39.54; see Fig. 22.1). What is more, *Pb1* and *Pb3* posts are more oriented to customers whose behaviours are expressed through likes. Meanwhile, *Pb2* and
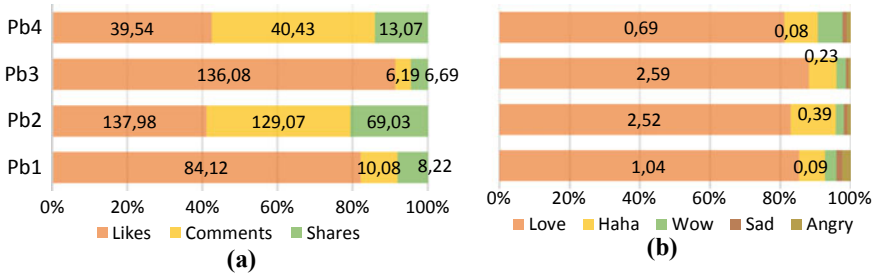
Fig. 22.1 Descriptive statistics by CEB through **a** likes, comments, shares and **b** emotional expressions on Facebook and pharmacy brands

Pb4 posts are more oriented to customers whose behaviours are expressed not only through likes but also via comments. This shows that customers of these pharmacies are more active on Facebook in relation to pharmacy brand.

Importantly, CEB on Facebook of all pharmacies' posts by other types of emotional reactions (i.e. love, haha, wow, sad and angry) was expressed at a very low level (mean from 0.01 to 2.59; see Fig. 22.1). This shows that customers of pharmacies are more likely to use traditional behavioural responses such as *likes, comments* and *shares* on Facebook instead of emotional reactions. Due to this, it is important to get deeper insights into how to foster the particular CEB on pharmacy brand pages on Facebook.

22.4.2   Results of the ANOVA Analysis of Pharmacy Brands Posts on Facebook

Before conducting ANOVA and machine learning decision tree classification analysis, the data were normalised, using Eq. (22.2), i.e. the number of followers of pharmacy brands on Facebook was taken into account. The engagement index, likes, comments and shares per 1,000 followers are summarised in Table 22.3.

According to the engagement index per 1,000 followers, normalised data show that the highest CEB is in *Pb2* (15.35), followed by a similar engagement index

Table 22.3 Normalised data

Pharmacy brand	Engagement index[2]	Likes[2]	Comments[2]	Shares[2]
Pb1	4.18	2.76	0.31	0.27
Pb2	15.35	3.50	3.29	1.76
Pb3	4.64	3.75	0.17	0.18
Pb4	1.91	0.47	0.48	0.16

[2]per 1,000 followers

in *Pb1* (4.18) and *Pb3* (4.64). Meanwhile, the lowest index value is in *Pb4* (1.91), whereas according to likes per 1,000 followers, the highest number is in *Pb3* (3.75), followed by *Pb2* (3.50), *Pb1* (2.76), with the lowest being in *Pb4* (0.47). Comparing all pharmacy brands, *Pb2* is distinguished by the highest number of comments and shares per 1,000 followers (3.29 and 1.76); other remaining pharmacy brand values vary between just 0.16 and 0.48. It is observed that *Pb4* has the highest number of followers but the lowest CEB. Further one-way ANOVA analysis of media type images will be presented detailing the descriptive analysis insights.

Table 22.4 shows the one-way ANOVA F-statistic and significance levels of data with media type of image across diverse content types. The results suggest that the customer engagement index depends on the existence of a logo in informational ($p < 0.001$), social ($p < 0.01$) and educational posts about pharmacy products' ($p < 0.001$) content types. Considering the existence of humans in the posts, only in those related to remuneration ($p < 0.01$) and education about pharmacy products' ($p < 0.01$) media types were significant differences in mean scores found. Meanwhile, when focusing on the most popular people reactions, i.e. likes, results suggest that likes significantly depend on the logo in all media types identified in Table 22.4 except social responsibility, i.e. informational ($p < 0.001$), social ($p < 0.01$), related to remuneration ($p < 0.01$) and educational ($p < 0.001$) about pharmacy products.

This means that in pharmacy posts, the logo representation has an important impact on customers or potential customer engagement. And when the posts are oriented in the context of remuneration and education about pharmacy products accompanied with humans, they engage customers more deeply.

Table 22.4 One-way ANOVA

Content type[3]	Score Per K[4], F-statistic		Likes Per K, F-statistic	
	logo	Human	logo	Human
Informational	**12.549**[*]	0.896	**12.985**[*]	1.374
Social	**7.625**[**]	0.116	**7.361**[**]	0.259
Remuneration	1.670	**7.109**[**]	**9.907**[**]	**24.468**[*]
Social responsibility	3.611	0.631	2.382	0.819
Educational about pharmacy products	**19.216**[*]	**7.760**[**]	**21.934**[*]	**6.571**[***]

[3]Excluding entertainment (0 posts), social and remuneration (ten posts), user-generated content (three posts), educational about beauty products (six posts) and job offers (three posts)
[4]*Score per K* denotes customer engagement index. [*]$p < 0.001$, [**]$p < 0.01$, [***]$p < 0.05$.

22.4.3 Results of the Decision Tree Analysis of Pharmacy Brands Posts on Facebook

Furthermore, we have used the data to train a binary classification model using the decision tree method to predict either a low or sufficient customer engagement index for posts on Facebook (see Fig. 22.2). Each pharmacy post was treated as a data point for training the classification model. We have used extracted posts' features as input parameters for our customer engagement prediction model. This included such features as content type (informational, social, related to remuneration, social responsibility and education about pharmacy products), use of the logo and the existence of a human in the image. Additionally, for each analysed post, we have calculated the value of the customer engagement index [1] per thousand fans. Using this calculated parameter, we have introduced two classes for our classification model that indicate the customer engagement level. A post was assigned a low engagement class label if the customer engagement index per thousand followers was lower than the median engagement index of 0.82 (of all analysed posts with images), and it was assigned to the sufficient engagement class label when it received a higher engagement index than the overall median of 0.82. Finally, we have used the label data set to train the prediction model, and it has estimated engagement with 65.4% accuracy (using tenfold cross-validation).

Then we analysed and visualised our trained classification model. For example, if the post had a logo, attributed to education about pharmacy products' content type with a human in the image, it was likely that the customers would be sufficiently engaged (see Fig. 22.2).
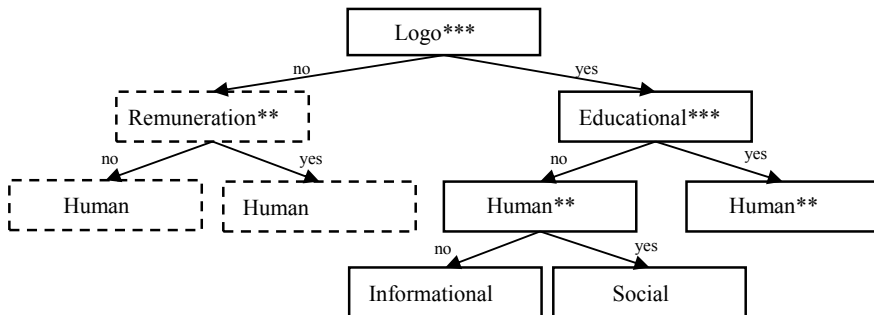
Fig. 22.2 Machine learning decision tree classification predicting CEB using a customer engagement index. *Note* Rectangles with a solid line indicate behaviour with sufficient engagement and with a dash indicate low customer engagement. *$p < 0.001$, ** $p < 0.01$, ***$p < 0.05$

22.5 Conclusions and Discussion

The literature review showed that there is no common ground in conceptualising the main types of content and media of brand posts on Facebook. There are major groups of content types of brands posts: informational, related to entertainment, remuneration and social responsibility, educational, social, user-generated content and job offers. In a similar vein, the media types of brand posts include video, images, weblinks and other.

The descriptive analysis answered *RQ1*. The results of pharmacy brands' posts on Facebook showed that the majority of pharmacies' posts included two media types, such as images and links. Regarding the content types of pharmacy brands, the findings suggest that the main content types are informational, educational and those related to remuneration. Moreover, the analysis indicated that customers expressed mostly likes, comments and shares and less emotional expressions (e.g. love, haha, wow, sad and angry).

RQ2 was explained by the ANOVA and a machine learning decision tree classification method analysis. The findings revealed that the CEB index depends on the existence of an image with a logo across informational, social and educational posts about pharmacy products' content types. Concerning the most popular customer reactions, especially *likes*, the results provide evidence that *likes* significantly depend on the logo of an image in all content types of pharmacy posts. Interestingly, the findings suggest that pharmacy brands should publish posts accompanied by images with a logo that might create trust for customers and in turn encourage customer behavioural responses.

There are several future research opportunities available because this is still a novel research area in social media marketing in relation to the AI development literature. An in-depth change analysis of additional features (e.g. the post time, the language of the text, etc.) of brand posts should be undertaken because it might be considered essential for CEB on Facebook. Another research line can include the financial aspects (i.e. return on investments, costs) of brand social media campaigns to ensure higher customer engagement with Facebook. Furthermore, future research might involve a bigger sample of pharmacy brand posts which can lead to a generalisation of the results and reveal new strategies for effective pharmacy brand communication.

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Part IX
Neuromarketing Technologies

Chapter 23
What Do Portuguese Really Feel About the COVID-19 Pandemic Consumer Neuroscience and Advanced Analytics—Discovering New Perspectives

Valentina Chkoniya , **Dorota Reykowska, and Rafal Ohme**

Abstract The diverse challenges that are faced during the COVID-19 pandemic demand a range of responses and require an innovative approach. However, the key success factor in any pandemic policy relies on behavior. Declarations and actions do not always overlap, and thus, predicting future behavior solely on the basis of self-reported measures seem to be ineffective (Ohme et al. in Anthropological Approaches to Understanding Consumption Patterns and Consumer Behavior. IGI Global, Hershey, pp. 427–448, 2020). This paper intends to highlight what do Portuguese really feel about the pandemic by using the "COVID-19 Fever" project data collected and analyzed with the iCode Smart Test in Portugal. Thanks to Consumer Neuroscience and Advanced Analytics, a new perspective goes beyond rational verbatims to investigate real deep non-conscious convictions that people may not even be fully aware of, which cannot be covered by traditional opinion surveys. By providing evidence from Portugal during the lockdown, this study offers unique data to analyze the influence of culture on attitudes and valuable insights into both practitioners and researchers.

23.1 Introduction

The novel COVID-19 is one of the greatest threats facing humanity. What our future holds as a result of this unimaginable pandemic crisis is unclear. Sweeping changes

V. Chkoniya (✉)
GOVCOPP, ISCA-UA, University of Aveiro, Aveiro, Portugal
e-mail: valentina.chkoniya@ua.pt

D. Reykowska · R. Ohme
NEUROHM, Warsaw, Poland
e-mail: dorota.reykowska@neurohm.com

R. Ohme
e-mail: rafal@neurohm.com

R. Ohme
WSB, Warsaw, Poland

will most likely occur in every sector of society, including health care, business, the economy, consumption, education, travel and personal relationships [1]. The diverse challenges that are faced demand a range of responses, some more sophisticated than others and require an innovative approach. However, the key success factor in any pandemic policy relies on behavior [2].

With this in mind, the "COVID-19 Fever" project was conducted as the contribution of consumer neuroscience and advanced analytics to help solve this crisis by measuring the impact on the sentiment of people. Coronavirus has changed the way we see issues and how we approach several aspects of life. The project provides direct or explicit and indirect or implicit data on people's emotions in the face of the crises. Using response time testing (RTT) captures more precisely the essence of people´s fears, attitudes, expediencies and raw emotions. In the end, it is the implicit non-conscious information processing that influences people's choices and behaviors [3]. Declarations and actions do not always overlap, and thus, predicting future behavior solely on the basis of self-reported measures seems to be ineffective [4]. RTT helps us to understand with more depth, conclude with more conviction and predict with more confidence.

This paper intends to highlight what do Portuguese really feel about the pandemic by using the "COVID-19 Fever" project data collected in Portugal. Attitudes were analyzed and explained by two factors (1) explicit, declared opinion, and (2) implicit, accessibility of attitudes. The new perspective that goes beyond rational verbatims that are collected by traditional researches, to investigate real deep non-conscious convictions that people may not even be fully aware of. It becomes especially relevant in the situation like COVID-19 pandemic when people face new, rapidly changing reality when human interactions are tempered by uncertainty [5]. By providing evidence from Portugal during the lockdown, this study offers valuable insights into both practitioners and researchers.

23.2 Background and Related Work

23.2.1 Globalization and Influence of Culture on Attitudes

Globalization is a very popular word these days. It is the word used to describe the growing interdependence of the world's economies, cultures and populations, brought about by cross-border trade in goods, services, technology, flows of investment, people and information [6]. On the other hand, we descend psychologically, and even socially from a long lineage; our minds and cultures are linked to the ways and means of ancient life and that inherent is a powerful force, a striving toward life maintenance that governs life in all its guises and helps us to find the way of comprehending the world and our place in it [7, 3]. The population of different countries behaves differently during the pandemic and the challenge today is to balance

these forces of globalization, which tends to standardize everything, with national identities, and to be able to survive without damaging our surroundings [8].

23.2.2   COVID-19 Pandemic

Originating as a cluster of unexplained cases of pneumonia in Wuhan, China, novel coronavirus disease—officially designated as COVID-19 by the World Health Organization—has reached the level of a pandemic, affecting countries all across the world [9]. In the era of globalization, there are international warnings about the outbreak. Pandemics leave enormous burdens on our lives, economies and societies at large [2]. People from the East to the West, and from the North to the South, are facing increasing threats from potential isolation, infection and even death [5]. With COVID-19 research in a state of flux, the diverse challenges that are faced demand a range of responses, some more sophisticated than others. The way forward is not entirely clear at this stage but clarity will come through the steady acquisition of robust evidence [10]. The physical health, economic productivity, social activities and even political stability are threatened by COVID-19. The four free flows under globalization—(1) flow of human capital, (2) flow of financial capital, (3) flow of goods and (4) flow of information—are now partially distorted, blocked or even broken [5].

Western governments have adopted a human-driven approach to control the transmission of COVID-19 [2]. At the heart of the mission is also communication [11]. Humans are social creatures, and social health is a core part of overall wellness [12]. The reason why the key success factor in any pandemic policy relies on a better understanding of their behavior. This paper has a special focus on what do Portuguese really feel about the COVID-19 pandemic, based on the new perspective provided by Consumer Neuroscience and Advanced Analytics.

23.2.3   Consumer Neuroscience and Advanced Analytics

The game-changing phenomenon for consumer researchers was the discovery that emotion and the non-conscious response patterns are not only significant but dominating influencers of decision making and behavior. Consumer neuroscience research, which applies tools and theories from neuroscience to better understand decision making and related processes, has generated excitement in marketing and cognate disciplines [13–18].

Analytics is the systematic computational analysis of data or statistics to obtain meaningful patterns and the process of applying those patterns to make effective decisions. Advanced analytics covers a wide range of techniques such as statistics, modeling and data mining that use current and historical facts to make predictions

about the future [19], but the application in consumer neuroscience is still limited in comparison with the application in marketing and finance areas.

Consumer neuroscience is a branch of research still under development [20]. It required a form of technology transformation as traditional researchers and marketers came to accept that non-conscious response and emotion are critical in driving perceptions and behaviors. This budding revolution was also enabled by scientific advancements in predictive analytics. Now with experience and extensive research by academics and practitioners, neurometrics is considered of high value for understanding consumer response and of great potential value for improving prediction leveraging artificial intelligence and machine learning [21].

To understand where habits/paradigms originate from, how they are established and how they can be altered, the field of neuroscience and advanced analytics may be an excellent ally in understanding what people really feel about the COVID-19 pandemic.

23.3 Methodology

23.3.1 Research Method

To uncover real attitudes about the pandemic, iCode Smart Test was used. iCode is a RTT tool based on Fazio's attitude accessibility paradigm. According to this model, attitudes can be explained by two factors (1) explicit, declared opinion and (2) implicit, accessibility of attitudes. Opinions that are strong and accessible are expressed with high confidence and indicated by faster response time while weaker, less accessible attitudes expressed with hesitation are indicated by slower response times [22]. Fazio has shown that correlations between attitudes and behavior are higher among people with fast response time when expressing their opinions, which means strong attitudes have more significant influence on behavior [22–24].

This research builds on an ongoing "COVID-19 Fever" international project that has emerged to better understand people's attitudes and opinions regarding the pandemic. It aims to assist and inspire effective communication by the health and media authorities, as well as to monitor the progress of the "COVID-19 Recovery" process. The case of Portugal was selected for this paper. The study was conducted during the lockdown period in Portugal (18.04.2020–06.05.2020).

23.3.2 iCode Smart Test

iCode is a web-based and device agnostic technology created by NEUROHM. Apart from declarations, it captures true attitudes which are free from conformity, social

and cognitive biases or wishful thinking. iCode is a smart test embedded with algorithms to estimate how much people hesitate when they express their opinion in a survey. Greater certainty indicates a well-established or internalized attitude. High confidence reveals that an attitude is more likely to drive behavior and is not just wishful thinking or idle words.

23.3.3   Process

The study was performed online; 291 Portuguese citizens took part. All the tasks were presented on a computer screen. The main part of the test was focused on gathering people's opinions on the COVID-19 pandemic. We have tested ten statements about the life during pandemic, grouped into five categories (two statements each): *worries about self, worries about others, trust in the healthcare system, following guidelines* and *pro-social behavior* (Table 23.1).

The task of the participants was to evaluate if they agree with the presented statements. The statements were shown individually, and the answers were given on a three-point scale: *yes, hard tell, no* (see Fig. 23.1). Participant's declarative responses as well as time needed to give the answer (RTT) were recorded.

To make sure that the registered response time for both *yes* and *no* answers is not biased, that is influenced by the position of the mouse, a control screen (advanced button) was introduced. The advanced button screen appeared between all the test screens. After the answer to each statement was given, a white board with a blue button in the middle was presented. The task of the respondents was to click on the

Table 23.1   Statements used in the study

Category	Statement
Following guidelines	I comply with the recommendations for physical distancing
	I comply with the restrictions to stay home
Pro-social behavior	I actively encourage others to follow the restrictions and guidelines
	I would like to help people who are more vulnerable to COVID-19
Evaluation of healthcare system	I am satisfied with how our healthcare system is handling this crisis
	In case of a coronavirus infection I will get appropriate medical help
Worries about others	I am worried about the health of my older family members
	I am worried about the health of people in my country
Worries about self	I'm worried about my financial situation
	I am worried about my own health

Fig. 23.1 Screen from the main part of the test

blue button. This ensured that each time, the distance to both yes and no buttons was the same. The test questions have been preceded by a calibration phase. This phase was focused on achieving three goals:

- *Familiarization with the scale.* The test used a three-point scale with all answer options shown on the screen: *yes, hard to tell, no.* In each trial, study subjects were asked to press a certain answer option. This part was dedicated to familiarize the study participants with the scale and with the arrangement of buttons on the screen, nine such screens were presented.
- *Familiarization with the purpose of the study and the type of the tasks.* Study subjects were presented with a series of statements describing the purpose of the study and the research process. They were informed that the test measures opinions and certainty. After the exposition of each statement, they had to press a button on the screen. This task was a motoric warm up to prepare them for the main part of the survey, nine screens were presented, each with a different statement.
- *Increasing participant's focus on the task*. After a few statements were presented, respondents were asked to indicate the statement that was presented last. If the response was wrong, a message showed up asking to work more carefully ("Please work carefully"). This task was aimed at increasing participants' readiness to focus on the presented statements.

23.3.4   Analysis

The first step of the analysis was to clean the data. Values lower than 500 ms and higher than 10000 ms were eliminated. Additionally, respondents who were very quick or very slow in providing their answers in over 40% of responses have been excluded from the analysis as people who did not pay enough attention to the task. During the analysis, the milliseconds were converted to natural logarithms [25], and the extreme values were truncated. The next step was to standardize the individual values into a scale from 0 to 1000, with the bottom values indicating the slowest response times and the top values representing the shortest response times.

The last step was to select the fast responses, indicating confident answer. A cutoff value of 600 has been taken as a threshold above which the results were treated as fast response. The proposed value has been calculated based on 15 studies, including approx. 3500 respondents and represents a unified value (benchmark) above which responses were significantly higher than average. In the following sections, this analysis will be referred to as *confident yes/no* answers.

The analysis is focused on two measures: *declarative* answers (explicit) and *confident* answers (measure of explicit response enriched with the implicit score, based on response time). Explicit and implicit scores are not treated as contradictory, and the implicit measure is used to supplement and deepen the explicit results.

Additionally, to further analyze the differences between declarative answers and the confidence of these answers *gap ratio* was introduced. This is the % of people who expressed hesitation when giving an answer (out of all who said *yes*). This was calculated using the following Formula (23.1).

$$\text{Gap ratio} = ((\text{yes} - \text{confident yes})/\text{yes}) * 100\% \qquad (23.1)$$

23.4   Results

When looking at the declarative results, 80% of answers expressed a positive opinion (*yes* answer), 10% expressed a negative opinion (*no* answer) and 10% indicated lack of opinion (*hard to tell* answer). Due to a significant dominance of affirmative responses, for the purpose of this paper only *yes* answers will be presented.

In four out of five tested categories, at least 70% of people agree with the tested statements. People declare that they are *following guidelines* (93%), they are concerned about the *health of others* (93%), and at the same time they positively evaluate the *healthcare system* (70%). The Portuguese are also willing to demonstrate *pro-social behavior* (83%). The lowest number of affirmative answers was observed for *worries about self* (63%) (see Fig. 23.2).

Analysis of the merged explicit and implicit answers (*confident yes*) shifts the ranking of categories. The confidence for *worries about others* (69%) and *following*
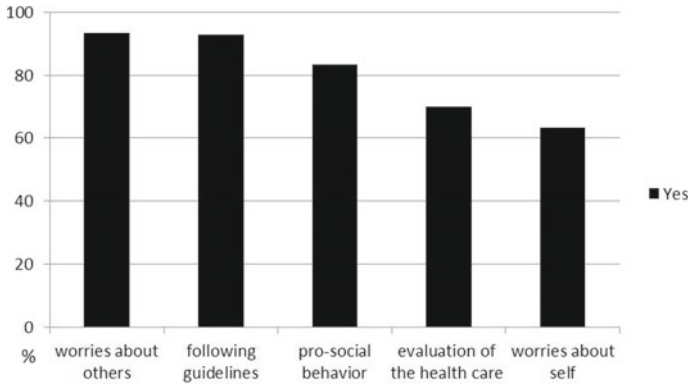
Fig. 23.2 Explicit answers to statements in each category. (Percent of people who explicitly agree with the statements)

guidelines (66%) is the highest followed by *worries about self* (47%). The confidence scores of the *healthcare system evaluations* as well as the eagerness for demonstrating *pro-social behavior* are the weakest 28 and 32%, respectively (Fig. 23.3).

The significant discrepancy between *yes* and *confident ye*s answers is reflected by high scores in the gap ratio. The highest numbers were obtained for two categories: readiness to perform *pro-social behavior* (62%) and *evaluations of the healthcare system* (60%). For the other three categories, the gap ratio oscillates between 26 and 29% (Fig. 23.4).
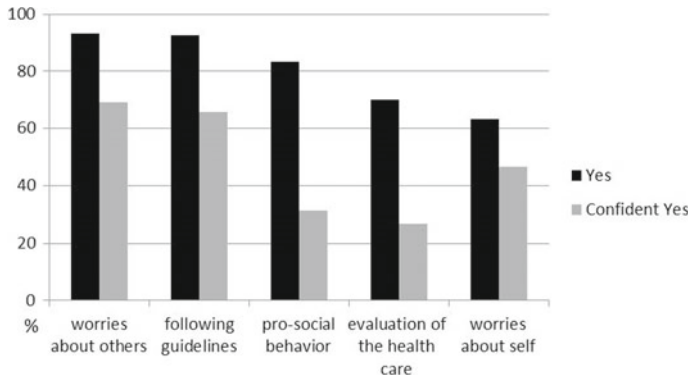
Fig. 23.3. Explicit and implicit answers to statements in each category
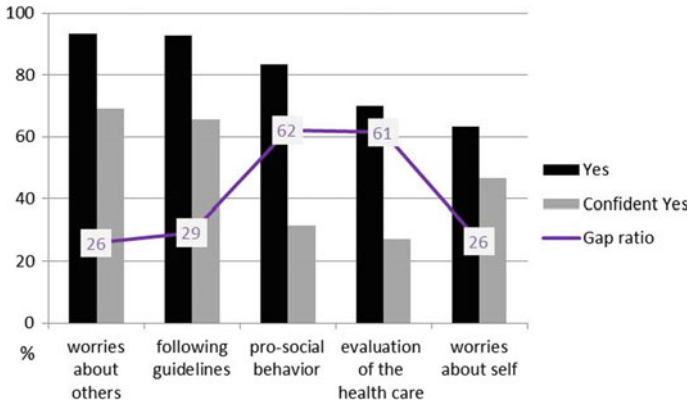
Fig. 23.4 Gap ratio for the explicit vs merged explicit and implicit answers

23.5 Discussion

Presented results show that on the declarative level the Portuguese society was very well prepared for the pandemic. People were very obedient when it comes to following the pandemic guidelines, they believed in the healthcare system. They were concerned about other people worrying about their health (not only their close ones, but the whole society!) they were also very eager to help the weaker and encourage others to follow the rules. At the same time, they were the least worried about themselves.

The perfect picture painted by the declarative answers can be very misleading if one decides to make decisions based solely on such results. Adding the additional dimension that is the confidence of response enables researchers to better understand people's attitudes and gain a more precise view of the reality. What are the learnings from looking at the confidence of answers?

1 On a declarative level, people were the least worried about themselves. In reality, they did worry, but did not want to show it (47% of *confident yes* answers, putting this category in the third position right after *following guidelines* and *worries about others*).

2 On a declarative level, people very positively evaluated the *healthcare system* but only 27% were confident about their answers. This means that 61%, even though gave an answer, made it without conviction.

3 A similar pattern was observed for *pro-social behavior*. 83% declared they want to help others, while only 32% expressed their answers with high confidence and again leaving 62% making empty promises.

4 Additionally, the confidence of answers has shown that the numbers of people who were truly worried about others and who were *following guidelines*, though still high (69% and 66%) was lower than declared. This has significant implications especially when it comes to *following guidelines*. The declarative results

could easily put vigilance of the authorities down. People did want to believe that they were doing all they need to stop the transmission of the virus, thus 93% confirmed *following guidelines*, but the number of people who responded with confidence shows that there was still room for improving communication and educating the society. Interestingly, a similar result was observed for two European countries that hit the most by the pandemic at the time of the research—Spain, with 96% declaring that they are following guidelines and Italy, with 94%. Adding the implicit dimension showed confident answers at 76 and 53%, respectively. Proving that people knew the rules, but did not obey to the expected extent, especially in Italy.

Where are these discrepancies coming from? Social expectations, conformity, trying to make a good impression or trying to look smart. All these can impact how people answer. The results are in line with previous findings showing that response time measurement offers results which are less influenced by self-presentation bias or social desirability than traditional questionnaires [26–28].

23.6   Conclusions

By moving away from traditional consumer behavioral studies and with research teams becoming increasingly multi-disciplinary and including functions from neuroscience and advanced analytics, the role of discovering new perspectives is increasingly gaining momentum. And although the collection of data about peoples' real feelings has previously been identified as challenging, we show in our research that the challenge is not only its collection but rather how to interpret this data to make effective use of it. In this paper, we explore the data related to five categories: *worries about others, worries about self, pro-social behavior, evaluation of the health care system* and *following guidelines*. The result of this study provides very interesting and unique data to analyze the influence of culture on attitudes.

The future of the consumer neuroscience field is presented that highlights the increase in the predictive power of brain and body data when integrated with artificial intelligence to predict human behavior.

From an exploratory perspective, thanks to advanced analytics, the results indicated that the response time score merged with the declarations score into a measure of confidence significantly improved the ability to understand what do Portuguese feel about the COVID-19 pandemic. Therefore, it can be a valuable expansion for traditional surveying techniques especially that the effort which is required to apply it is relatively low in comparison with other non-declarative techniques [29, 30].

The pandemic and its consequences at the global level are an exceptional and disruptive situation deeply affecting emotions and behaviors. We need to see the future with hope. The level of conviction is a reliable predictor of behavior. The crisis will eventually pass, and out of this ruin and trauma, hope will rise [5]. Successful policy and practice emerging from this crisis will help build our resilience. A deep

understanding of human behavior can play a key role in facilitating these discussions. This will allow us to be better prepared for the future.

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Chapter 24
Calling for the Study of the Neuroscience of the Sports Fan Consumer

Ricardo Roseira Cayolla and **José Paulo Marques dos Santos**

Abstract Sports fans and fandoms are special (and extreme) cases of the consumer-brand relationship concept. The implications for markets may be positive (e.g., purchasing merchandizing), but also negative (e.g., ostracizing rivals' sponsors). Such behavior calls for a deeper understanding, but traditional market research methods tend to fail to capture the underlying unconscious/emotion dimensions. Here, we explore the pertinent concepts (brands, self-construal, consumer-brand relationships, brand communities and tribes, and fan identity) and suggest the participation of consumer neuroscience to tackle the neural and psychological grounds of fan behavior.

24.1 Introduction

Fandoms call for deeper research. Fandoms are ecosystems that involve the fans, obviously, teams, other followers and sympathizers, teams' governance, local authorities and regional and national governments, even international organizations, and sponsors and other market players. However, because of the devotion to the brand (team), fandoms' actions tend to be powerful and noticeable, standing out from common consumer associations and unions.

The purpose of this article is to uncover and confront pertinent constructs, theories, and models to the fandom ecosystem. For such aim, the rationale here unrolled stands on five stages and culminates in a set of questions, whose answers may shed some light on the intrinsic behavior of these special consumers.

R. R. Cayolla (✉)
Universidade Portucalense, REMIT, Porto, Portugal
e-mail: ricardo.cayolla@gmail.com

Universidade de Aveiro, GOVCOP, Aveiro, Portugal

J. P. Marques dos Santos
University Institute of Maia, Maia, Portugal
e-mail: jpsantos@ismai.pt

Faculty of Medicine, University of Porto, Porto, Portugal

The journey starts in the concept of brands and how it has evolved recently. From simple markers of products on the shelves, brands and their meanings, nowadays, have a role in the consumer's self-construal. In fact, consumers establish enduring relationships with brands and, more surprisingly, brands serve as mediators to join consumers together, establishing brand communities and brand tribes. Now, we have the necessary concepts to understand the fan and fandoms phenomenon, stressing on how fans' identity is constructed and its implication for the team and markets. However, traditional market research instruments have been failing in capturing the unconscious or emotion dimensions, so important for the fandom and the fan-team relationship. We make a foray into consumer neuroscience, highlighting some recent achievements, which may help reveal the substance of the fan behavior.

24.2   Brands

Centuries ago, the role of brands was to identify the cattle owner, i.e., brands were used for mere possessions differentiation [1, 2]. However, even today, very influential associations, like the American Marketing Association, define brands solely as product/company differentiators in the shelves [3]:

> Brand: a name, term, design, symbol, or any other feature that identifies one seller's good or service as distinct from those of other sellers. The legal term for brand is trademark. A brand may identify one item, a family of items, or all items of that seller. If used for the firm as a whole, the preferred term is trade name.

Nonetheless, Kevin Lane Keller finds brands as multidimensional entities [4], which contradicts the simple monodimensional role of mere differentiators. One step further, Jennifer Aaker found traits of personality in brands [5], much inspired in the Big Five theory of human personality traits. From mere product, differentiators to human-like personality traits are a big step. What a brand is, still is an open and quite complex matter [6]. We know, however, that the meaning of brands is co-constructed among brand owners and their consumers [7], and that brands encompass a significant social dimension [8, 9].

Branding has been studied with neuroimaging techniques and "the workhorse technique in consumer neuroscience has been the fMRI" [10]. Brands have a decisive "social dimension" [9] and have been studied under different themes such as soft drinks [11], wine [12], cars [13], luxury [14], consumer-brand relationships [15], loyalty [16], emotions [17], price tag [12], and brand's neural profile [18, 19].

Differences between "strong brands" and "weak brands," "positive brands" or "preferred brands" and its impacts on consumer behavior (e.g., attitude, loyalty, WOM, purchase intention) are being studied in the branding literature [8, 20–22].

In sum, brands are complex entities, besides their role as differentiating marks, encompassing a social dimension that may act while promoting social bonds among consumers.

24.3 The Contribution of Brands to Self-construal

Self-construal, and the participation of the self-concept in the understanding of consumer behavior, is not new [23, 24]. The narcissistic consumer was already identified [25], the one that acquires goods to maintain and improve his/her self, either restricted, or extended [26], either in the physical world, or digital [27]. Much like food, it seems to exist an assimilation process where the "nutrients" (meanings) of the "food" (products and brands) are integrated into the individual [28].

Such a paradigm has been used to explain buying decisions through the congruence among products and the self-image [29, 30]. Although this is the, let us say, a positive way, there is also the negative one, where certain products are invested with negative meanings by a particular social group, which leads to the rejection of such offers [31].

From a psychological point-of-view, the consumption of products and brands helps individuals to cope and deal with their existential insecurity and the fear of death [32]. Similarly, the consumption helps to protect the self and even repair eventual damages on it [33].

Self-construal is a complex and plodding process. Importantly, one does this process on a daily basis but integrated into a group [34, 35], i.e., one works both in order to move from his/her actual state toward his/her ideal state, and in order to move from his/her social actual state toward his/her social ideal state [36].

Hence, brands are part of the identity construction of the consumer and its neural correlates have been being investigated, either the participation of the constructs self-relatedness and social relevance [9], and the neural participation of these constructs in the brand perception and preference [8].

24.4 Consumer-Brand Relationships, Brand Communities, Brand Tribes, Before and in the Digital Era

The 1998 Susan Fournier's seminal article "Consumers and their brands: developing relationship theory in consumer research" taught us that humans (consumers) start, maintain, and end relationships with non-human entities: brands [37]. However, so relationships hold on time, both parts (not just only one) must actively contribute to maintaining the relation (otherwise, it will languish and vanish). Therefore, brands also contribute to the relationship welfare proactively.

A few years after, Muñiz and O'Guinn coin the concept of "brand communities" encompassing its three requirements: "(…) shared consciousness, rituals and traditions, and a sense of moral responsibility." [38]. The subsequent year witnessed two other articles pertinent to consumers' grouping: Cova and Cova's concept of "tribal marketing" [39], and McAlexander, Schouten, and Koenig who elaborate on how to build a brand community [40].

This stream of research has been evolving, for example, Aggarwal [41] explores the influence of the norms that rule-brand relationship on consumer attitudes and behavior, Cova, Kozinets and Shankar [42] delve into the concept of "consumer tribes," Fournier and Lee [43] characterize and give advice on how to get brand communities right, or Veloutsou and Moutinho [44] who analyze the influence of reputation on brand communities and brand tribes. The advent of the actual digital era did not preclude the establishment of a stable and perennial grouping of consumers around brands consolidated by lasting relational bonds as some researchers detail: for instance, the co-creation (consumers and marketers) experiences in brand communities that rely on social media" [45], or the search for social drivers and mediators that contribute to business models based on the online brand communities [46].

Hence, the consumer-brand relationship is a field that rose importance in marketing and consumer behavior since the beginning of the present century and its pertinency keeps current and important for the discipline. Conferences specialized in the theme and special issues in academic journals have been stressing the importance of consumer-brand relationships [47, 48].

This is the time of the "consumption studies" [25]. Considering the consumer alone, isolated from others, does not make any sense nowadays. Consumers do consumption in groups, but not merely occasional groups. On the contrary, groups that are cohesive in time, aggregated by relationships among consumers and brands, and consumers, brands and other consumers. It is critical to belonging, and it is critical to be in group [35, 49, 50].

24.5 Sports Fans Identity

As one would expect, the consumption of the sports spectacles and some of their special consumers/players, fans, already started. Interestingly, the existence of tribal behavior in fandoms has been reported, influencing the behavioral conduct and decisions of the fans [51–53]. Because of the characteristic exuberance, communities/tribes, relationships among fans, and fans-brands relationships, this system may be an opportunity to study human engagement with brands. Here, brands may be sports clubs, for example, and all the common commercial brands involved, like sponsors.

Cognitive and affective satisfaction are two of the most important outcomes for the fan in sporting events [54]. Predicting support for the team and his/her future attitudes, acknowledging the increasingly competitive world, becomes essential for sports organizations if they pretend to achieve success [55]. Despite the importance that the identity of a fan's role represents for sports organizations, the first steps are being taken only now [56].

Team identification has its origins in the social identity theory [57]. Tajfel's social identity theory explains how individuals group together, stressing categories and, while doing so, exaggerating the differences between one's group and the other groups, and also, amplifying the similarities among the own group. Emphasizing

external differences and internal similarities contributes to the individual self-image enhancement and a sense of belongingness. Following this logic, team identification represents a mental relationship with a team, encompassing the affective contribution a supporter adds to backing the team [58] and concentrate on category-based identities (i.e., teams) [59]. Team identity catalyzes the sense of belongingness and social interconnection with other fans of the team [55]. Social cooperation with others in the same category (team) is the main drive, meaning pairing with other enthusiasts of the same class [60].

The recent concept in sport management of fan identity stems from the identity literature and has roots in the identity theory [56, 61–64]. Focusing on the importance that the individual gives to being a fan of the team, fan identity is, in its genesis, an identity of function (i.e., the role to play) as a fan of the team that supports [61]. It relates to the role-based identity [55], a concept that classifies the features attributed to an individual within a social role [65], such as being a fan of a team. A role-based measure of cult (i.e., fan identity) should integrate how is important to the individual the position of being a fan [55]. The former (identity theory) focuses on perceptions about how meaningful is to the individual his/her role as a fan of the team, independently of "any other fan or anyone else" [55]. It is the influence and prominence of the role that leverages a classic identity [64].

Besides the individual social identity, every consumer has one additional personal identity [62]. Fan identity expands the theoretical concept of the idea and image that one has about his/herself, integrating it into his/her social life [66]. In terms of cognitive and affective reactions, fan identity can be the mirror of each individual, in light of the incentives associated with the team [55]. Fan identity is defined as "the meaning individuals attach to their role of being fans of their favorite team" [56].

There are many advantages that sport offers concerning the identity of the consumer [67]. However, the fans' identity is not static. It changes over time. Perceiving these variations allows sport managers to acquire a finer understanding of the construction of the fan's identity and subsequent behaviors and reactions toward the team [56]. Higher fan identity with the team has tangible results as a consumer [68] in several areas such as personal, financial, family, life planning, job, and friends [69], in the consumption and anti-consumption communities [70]. Greater satisfaction with the purchase [71], major possibility of purchasing associated products, and more favorable attitudes toward team sponsors [72], are some of the factors that characterize the behavior of highly identified fans [73]. It is thus clear, since all fans are different and, as such, have different degrees of identification with the team, that it is important for sports teams to acquire greater knowledge and understanding of the identity of the fans [56].

In a study aimed at understanding the behavior of National Football League fans (NFL), Wang, Braunstein-Minkove, Baker et al. [61] found that, although social relationships are important, not only as a starting point but also for the development of the fan identity, group comparisons are not a *sine qua non* condition. The image that each fan has of him/herself influences both the fan identity and the consumption related to that reality [61]. These results confirm the work of Trail, Anderson and Fink

[74] about the importance of the fan identity as self-esteem for future merchandizing purchases and presence in the stadiums, arenas, and other sports venues.

Another concept, "Basking in reflected glory" (BIRG), invoke the individual's bias to "share in the glory of a successful other with whom they are in some way associated" [75], and it is used to keep a positive image [76]. Fans of winning teams tend to internalize success [77, 78] and tend to associate themselves to positively evaluated teams [75]. It is an enhancement tactic [76], a way for the fan to shine [54, 79].

Lock and Heere [62] put forward the differences between models on team identification in sport management research (i.e., identity theory and the social identity approach). They describe fan and team identification, as well as suggest that future research on team identification should focus on one theme: "fan identification in studies using identity theory and team identification in studies exploring the influence of group identity" [62].

The relationship between sports fans and their teams is very important. In a pioneering work about fan identity, while multidimensional construct, Biscaia et al. [56] concluded that the proposed model of fan identity comprises four factors: self-perceived levels of power, urgency, external legitimacy, and internal legitimacy. In their opinion, these are crucial starting points for future investigations regarding the concept of the fan identity and the strengthening of the relationships among fans and sports teams.

Fan identity can be a global response (i.e., cognitive and affective) of a person to a related stimulus associated with a brand [55]. A vast awareness about the behavior of the fan is a plus for the marketer and managers in general.

Currently, the literature is rich regarding the study of team identification [67, 80, 81]. However, that is not the case of the fan identity, which still is quite a virginal area. Fan identity goes further and deeper than mere team identification and, as such, potentially more "rich sociologically" [62], thus, opening up the opportunity for "deeper exploration" [56].

As noted above, "little is known about how individuals perceive their role of being fans of a team [56]. The problem gets worse due to the methods normally used: surveys, self-report measures [82], interviews, ethnographies [83], and focus groups [84]. Sport is no exception [85]. Through behavioral psychology, these traditional methods seek to discover what is going on in the consumer's brain, both psychologically and emotionally [83]. These "work-horses" are fast and inexpensive [82]. So, what is the problem? The problem is that they are "imperfect predictors of population-level responses" [84] and it is very difficult to understand what's going on in the brain of the consumers [82], that is, to know the true emotional reasons why they have preferences and make decisions [86], which usually are not accessible to conscious reasoning (as required in surveys). In questionnaires, people can mask what they truly feel, or they may not be aware even. In focus groups, exist the risk of dominance (of one subject over the others) which contaminates data. Regardless of whether the measure taken is better than the common judgment "more or less" [87], we never really know what goes on in the minds of those who make them. Magnetic resonance imaging, as a neuroimaging tool, may be an advantage when compared to

traditional instruments, thus, expanding our knowledge between self-reporting and subsequent consumer behavior [88].

24.6 Consumer Neuroscience

It is hardly credible that an individual, regardless of his/her will and determination, can access his/her subconscious and report what motivated him/her to make this or that decision [82]. Consumer neuroscience may provide a workaround for this problem by directly addressing the source of decisions and behaviors: the brain [89].

It is assumed that neuroscience techniques help a broader and deeper understanding of the functioning of the human brain and its subsequent behavioral relationship as a consumer [90]. By the means of these techniques, it is possible to measure brain responses to the stimuli in question [91]. The study of brain reactions aims to know as much as possible about this hidden side of the experience lived by the consumer [92] through the decision-making process [93], of attentional and memory processes [94], and emotional [95] (for a review Baron et al. [96]).

The tendency for studies in neuroscience in marketing, consumer behavior, and advertising is a reality. This is corroborated by the intense research handled [10, 97, 98]. New methods, combined with collaboration between the social and biological sciences, promoted quantum leaps in knowledge, whether in the social, behavioral, biological, and management fields [99]. Sport, as a social landmark, is no exception [100–102].

One particular technique should deserve special attention: hyperscanning. Hyperscanning means simultaneously scan the brains of two or more subjects while they interact. It is possible to scan the brains of all subjects that participate in a card game and, in this way, map the psychological processes involved in multiple perspectives, for example, the one who offers, and the one that decides about the offer [103]. Hyperscanning allows then to register the big picture of a social situation, with interactions among subjects, either they are cooperating or competing [104].

24.7 Direction for Further Research

So far, we have several interconnected ingredients: brands, self-construal, belongingness, fandom, and neuroscientific knowledge and techniques. Fandoms are subcultures (tribes) of fans, i.e., individuals that join around a sports brand. Such experience allows them to feel belonging, contributing to their self-construal. But fans are not mere supporters or individuals that just prefer one team to another. They cultivate the dedication to the brand (team) and act as curators of its meaning. This turns sports fans and fandoms an ideal social ecosystem to study human engagement or even devotion. In fact, studying such special humans may shed light, not only on sports engagement but also on religion and politics, rising some questions:

- What are the neural processes and networks of the fan highly identified and committed with the brand and who has years of militancy?
- Are there neural differences between the novice fans when compared with the elderly?
- What is the role/importance of the brand in this process?
- also, what is the subjective perspective of the consumer considering his brand personality [105]?
- Is there a distinct biology between high-identified fans and their relationship with brands with different strengths (i.e. strong vs. Weak)?

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Part X
Omnichannel and Marketing Communication

Chapter 25
Touchpoints and Channels: Classifications, Characteristics, and Issues for Future Research

Susana Santos and Helena Martins Gonçalves

Abstract Consumer experiences and decision journeys are constructed and influenced by an ever-increasing number of touchpoints and channels. However, recent studies have recognized limitations in previous literature regarding the distinctions and diversity among them. Also, with the recent COVID-19 pandemic, consumer touchpoint, and channel consumption has drastically changed, with potential implications for the business models of firms. Thus, this paper systematizes existing knowledge concerning the touchpoint and channel constructs and discusses emerging issues related to omnichannel management in the COVID-19 pandemic context. Specifically, the paper develops a structured understanding of touchpoint and channel definitions, the classification of touchpoints, the strengths related with particular touchpoint types, and how these strengths make specific touchpoints more appropriate for particular moments in the consumer decision journey. The emerging issues lead to the discussion of directions for future research, namely regarding touchpoint evaluations, the management of supply chains, and the use of new technologies.

25.1 Introduction

Understanding consumer experiences as a means to increase loyalty in today's retail environment are considered a leading research objective [1]. Consumer experience is a multidimensional construct focused on the subjective cognitive, behavioral, emotional, social, and sensorial response of the consumer to the offerings of a firm [2]. Typically, consumer experience is conceptualized and understood recurring to the analysis of the consumer decision journey (e.g., [3]). According to Lemon and Verhoef [2], this journey is the process consumers go through that comprises all decision-making stages and corresponding touchpoints at that stage. Touchpoints are thus the building blocks of consumer decision journeys and together they make up the consumer experience.

S. Santos (✉) · H. M. Gonçalves
ADVANCE/CSG, ISEG, Universidade de Lisboa, Miguel Lúpi, n 20, gab. 311, 1249-078 Lisboa, Portugal
e-mail: Susana.Santos@Springer.com

Touchpoints are, however, increasing in number and types [4]. Besides traditional call centers, emails, or brick-and-mortar contacts, mobile apps, social media, and virtual assistants are now commonly used by consumers to search and purchase. The availability of more and more digital touchpoints has added opportunities for consumers to be more proactive and informed searchers and deciders [5], expecting seamless and interchangeable touchpoint use and switching which is practically impossible for firms to control [6]. In this context marked by a blurred distinction between channels, firms have advanced from a multichannel to omnichannel retailing strategy, where the focus is activity integration within and across multiple channels to coincide with how consumers shop [7] and optimize consumer experience [6].

Although it is known that effective touchpoint and channel understanding and management is crucial for firm success [1], Wagner et al. [4] recently pointed the surprisingly shortcoming of previous literature in recognizing distinctions and diversity among touchpoints and corresponding channels, which may ultimately relate to the lack of a theoretically systematic differentiation and analysis of both constructs. Moreover, with the recent COVID-19 worldwide pandemic, profound shifts in the way channels and touchpoints are consumed have been noted. Compared to the pre-COVID-19 era, consumers are expressing more hoarding behaviors and are significantly embracing new digital technologies to shop, for work, and for education [8]. Besides the acceleration of online retailing, PCs and other digital devices have transformed into the gateway to a great part of socialization and human interactions [9]. Recent changes in decision-making paradigms require more reflection regarding the importance of touchpoints and channels for consumers and the challenges and opportunities in omnichannel management for firms, which include the structure of internal value chain operations and the investment in more emerging technologies.

As such, the key objectives of this paper are to systematize existing knowledge regarding the touchpoint and channel constructs and to discuss some emerging issues related to omnichannel management in the current pandemic situation. By addressing these topics, this paper provides three relevant contributions to omnichannel and consumer decision journey literature. (1) Systematizing the literature concerning the touchpoint and channel constructs adds knowledge at the most primary level in the omnichannel management chain, which complements recent, more general systematic reviews on omnichannel retailing (e.g., [1]). (2) Considering all touchpoint and channel types allow a holistic view of definitions and characteristics, supplementing studies focused on only offline or online touchpoints and channels (e.g., [4]). (3) The discussion of emerging issues, specifically in the current pandemic situation, provides relevant implications and opportunities for future research in evaluating and designing touchpoints and channels and managing omnichannel systems.

25.2 Touchpoint and Channel Constructs

25.2.1 Definition of Channels

At the center of omnichannel retailing are channels themselves. From a distribution perspective, Kotler and Armstrong [10] define channels as "a set of interdependent organizations that help make a product or service available for use or consumption" (p. 365). More globally, and from a multichannel standpoint, Neslin et al. [11] view the term "channel" as a "contact point, or a medium through which the firm and the customer interact" (p. 96). In service design literature, it is adopted in a similar manner. For example, Halvorsrud et al. [12] define channels as "mediums used to convey communication and interaction between a customer and a service provider" (p. 846). Shankar et al. [13], on the other hand, conceptually distinguish between mediums and channels. According to the authors, a medium is a "means of communication such as app, email, and print", and a channel is a "mode of transaction such as mobile, desktop, telephone, and physical store" (p. 38).

Recently, Wagner et al. [4] argued that the device diversity in omnichannel retailing requires viewing channels in a more enhanced and particular manner. Focusing only on online retailing, the authors define an e-channel as "the category of Internet-enabled devices (for example, mobile devices) that consumers can use to interact with and purchase from an online retailer" (p. 257). According to the logic behind this more recent definition, and extended to the offline environment as well, physical stores, personal computers/laptops, and mobile devices are all examples of channels.

25.2.2 Touchpoints and Their Relation to Channels

Although the term "touchpoint" is often used among practitioners (e.g., [14, 15]), it has more recently entered academic literature (e.g., [16, 17]). According to Rawson et al. [14], touchpoints are critical moments determined by consumers' interaction with the organization and its offerings which occur on the path-to-purchase and after. Baxendale et al. [16] define "touchpoint" in a similar but simpler manner: it is "an episode of direct or indirect contact with a brand" (p. 236). In some cases, it is used interchangeably with notion of "moment of truth" [17] and "contact point" [4].

Touchpoints and channels closely relate. Channels are carriers of touchpoints that allow instances of contact with consumers [12]. From a purely online perspective, channels would be the hardware alternatives while touchpoints the software options [4]. Stein and Ramaseshan [17] also view touchpoints as being mediated by channels. However, the authors further indicate that touchpoints are not restricted to firm-specific channels, as Baxendale et al. [16] also delimitate. Touchpoints do not need to have a direct link to the firm, and indirect interactions during unplanned encounters,

such as direct or indirect word-of-mouth and reviews, are also considered touchpoints mediated by consumer-controlled offline or online channels.

According to Halvorsrud et al. [12], touchpoints must meet certain criteria and attributes. First, touchpoints must be visible to the consumer. "If the consumer does not encounter it in any way, it is not a touchpoint" (p. 846). Second, touchpoints must be able to be appointed in time by the consumer. Third, touchpoints must be mediated by channels that can be specified. Halvorsrud et al. [12] add that touchpoints must leave a trace (e.g., an entry in the call log of a cell phone) and the communication it conveys must be directed toward an intended receiver. Advertising and broadcast commercials are not considered "true" touchpoints by the authors since these two last elements are not fully satisfied. However, one can argue that commercials are targeted to specific audiences and can be recorded, which make them consistent with touchpoint criteria.

25.2.3   Classification of Touchpoints

Existing studies indicate that, during the decision-making process, multiple consumer touchpoints can be identified. These range from in-store product displays, sales-people, direct word-of-mouth, TV advertising, and magazine coverage, to online generic and branded searches, comparison agents, brand and affiliate Web sites, social media, and email advertising (e.g., [5, 16, 18]). Due to the amount and complexity of touchpoints, various authors have attempted to categorize them. Adapted from recent literature [2, 5, 16, 18, 19], Table 25.1 describes some classification approaches advanced in current literature. Although not specifically included in the table, the first classification of all can be the online/offline one. However, the table indicates whether the particular classification approach applies to online and/or offline channels.

Although a wide range of touchpoints exist, studies tend to focus on data regarding subgroups (either online or offline, or a small number of both). Baxendale et al. [16] argue that this can be due to the lack of available data of specific touchpoints to perform statistical modeling and analysis. This may, however, lend itself to not consider the most relevant touchpoints that consumers actually are aware of and experience.

25.2.4   Touchpoint Outcomes and Strengths

Independently of their form of classification, it is known that consumers are exposed to various touchpoints during their decision journey. Consumer processing resulting from this exposure may, however, lead to several distinct outcomes. Although mainly for communication options, the outcomes discussed by Batra and Keller [5] may apply to touchpoints in general. For the authors, some of the most important commu-nication goals of firms are the creation of salience and awareness, transfer of detailed

Table 25.1 Classification approaches to touchpoints

Classification approaches	Channel (online versus offline)	Definition and classification
Ownership [2, 16]	Online and/or offline	Who detains control over the touchpoint: – Brand-owned (controlled by the brand, e.g., brand Web sites); – Partner-owned (controlled by the firm and one or more of its partners, e.g., affiliate Web sites); or – Customer-owned or external touchpoints (controlled by customers and related information sources, e.g., social media and review sites)
Origin of contact [18, 19]	Online and/or offline	Who is the originator of the contact: – Firm-initiated (firm determines the timing and exposures of the touchpoint, e.g., display advertising); or – Consumer-initiated (potential consumers trigger communications with active searches, e.g., price comparison Web sites)
Brand keyword usage [18]	Online	How is the type-in usage of a brand or retailer's name: – Branded keywords (consumers actively insert a direct type-in of a brand or retailer's name, e.g., branded searches); or – Generic keywords (consumers entail in a generic, unbranded search, e.g., price comparison or review Web sites)
Browsing goal [18]	Online	What is the browsing purpose: – Informational search goals (consumers view Web sites to learn); or – Navigational search goals (consumers desire to access specific Web sites)

Table 25.1 (continued)

Classification approaches	Channel (online versus offline)	Definition and classification
Degree of content integration [5, 18, 19]	Online and/or offline	What is the extent of integration in the editorial network: – Content-integrated (content in that touchpoint is integrated with the remainder media and editorial network); or – Content-separate (content in that touchpoint has little or no integration with editorial content)
Degree of personalization [18, 19]	Online and/or offline	What is the level of individualization of the advertising message according to specific characteristics of a target audience: – High (the touchpoint can target a specific audience based on their individual attributes); or – Low (the touchpoint targets a broader audience)

information, establishment of brand imagery and personality, building of trust, elicit of emotions, inspiration to action, reinforcement of loyalty, and the connection of people.

Touchpoints, however, require enough strength to achieve these goals, which is determined by their type and nature. For example, media richness theory suggests that the ability to provide more information through nonverbal cues makes some types of channels richer than others (e.g., TV is richer than radio and physical stores richer than mobile devices) [20]. Previous studies have mostly focused on the strengths and effects of more traditional media, whose power still endures, such as TV, radio, and printed advertising [21]. The influence of creative ads on persuasion [22], the experiential effect of ad repetition [23], and the impact of advertising on product awareness and evolution of choice sets [24] are relevant topics in advertising literature.

Attention has also been given to more recent online touchpoints due to their potential to offer more tailored information and targeted placements. Firms can send messages that influence consumer action based on their personal behaviors and interests [5]. For example, studies have acknowledged the importance of display ads to illicit awareness and direct consumers to firm Web sites [18], the role of search ads to trigger conversion [25], the relation of Web sites to informational needs [5], or the influence of apps, advertising customization, and location proximity to stores provided by mobile touchpoints [13]. Uncontrollable touchpoints have major effects too. Unsolicited electronic word-of-mouth (i.e., social media, reviews) has influence

in creating awareness, triggering interest, and generating product adoption [26], and price comparison engines are strong at providing comparable information [18].

25.2.5 *Linking Touchpoints and Decision-Making Stages*

Although individual touchpoint moments are important, the combination of their strengths throughout the decision journey may provide the most value [5]. At each decision-making stage, consumers are believed to be in specific information-processing states of mind, making particular touchpoints and channels more or less appropriate to satisfy information needs at that point [5]. For example, Stern and Resnik [21] argue that the television is more effective for building awareness, interest, and consideration, which correspond to initial phases of the decision journey. Printed advertising, on the other hand, is considered more adequate for detailed exposure, thus better suited for intermediate phases that require the supply of information. Anderl, Schumann, et al. [18] focus on online touchpoints. Their study found that firm-initiated touchpoints, such as displays, affiliate advertising, and emails are adequate to create awareness. But when consumers switch to customer-initiated touchpoints, such as direct type-ins, branded and generic search, and partner and price comparison Web sites, this indicated progress in the decision journey. Consumers engage with these touchpoints for their adequacy for identifying and evaluating alternatives, which indicates that they are closer to the purchase. As to mobile-related touchpoints, Singh and Swait [27] evidenced that the characteristics of the mobile channel make it more convenient for search and price comparison, a stage preceding choice and purchase. Batra and Keller [5] further suggest that mobile touchpoints are best suited for propelling persuaded consumers to action and social media more appropriate for creating preference and loyalty latter in the decision journey. Based on touchpoint strengths, these authors present a linkage of some important touchpoints and the stages of the consumer decision process (Table 25.2).

Although many associations presented in the table are based on known literature, Batra and Keller [5] note that, specifically regarding new digital media, limited empirical knowledge exists regarding the linkages. Thus, the presented relations should be faced as research propositions that clearly require more investigation and empirical testing. As such, it is not only important to understand the stages/activities of consumer decision-making and the corresponding touchpoints/channels used but determining possible associations between both is of great importance to advance theoretical and empirical knowledge in current omnichannel literature.

25.3 Emerging Issues and Avenues for Future Research

From the previous discussion, it is clear that the touchpoint and channel topic are increasingly more nuanced, especially with evolving technologies. Also, although

Table 25.2 Strengths of various communication options throughout the decision journey

Decision journey stage	Communication options								
	TV	Promos	Events	Web site	Search	Display	Selling	Social media	Mobile
Need recognition	+++	+	+	+	+++	+++	+++	++	++
Awareness	+++	++	+++	+++	+++	+++	+++	++	+
Examination	++	++	+	+++	+++	+++	+++	++	++
Learning	++	++	+	+++	+++	++	+++	++	+++
Liking	+++	++	+++	+++	+	+	++	+++	+++
Willingness to pay	+	++	+	++	+	+	+++	+	++
Commitment	+	+++	+	++	+	+	+++	+	+++
Consumption	+	+++	+	+	+	+	+	++	++
Satisfaction	++	++	+	++	+	+	+	++	++
Loyalty	++	+++	+++	++	+	+	+++	+++	+++
Engagement	+	+++	+++	+++	+	+	+	+++	+++
Advocation	+	+	+++	+++	+	+	+	+++	++

Note + = least influence; ++ = medium influence; +++ = greatest influence
Source Batra and Keller [5]

more research is needed, touchpoints have inherent characteristics, translated into particular strengths that may indicate that one is more appropriate for specific activities during the consumer decision journey than others. With more touchpoints available, firms need to allocate more resources to touchpoint prioritization and adaptation, as well as decision journey monitoring and design [28]. However, early 2020 witnessed the outbreak of the global COVID-19 pandemic with massive implications for firms. Government restrictions around the world lead countless firms to shut down and consumers to maintain social distancing or indoors to contain the spreading. With this, a substantial number of consumers turned to online shopping [29], which resulted in many firms having to rethink their business models and the way their touchpoints are managed. Next, we present some issues arising from the recent changes in consumer behavior due to the COVID-19 pandemic as well as avenues for further research, namely understanding consumer touchpoint evaluations, managing internal operations in the supply chain, and utilizing new technologies.

Understanding Consumer Touchpoint Evaluations. According to Rosenbaum et al. [15], in the past, managers have implicitly and mistakenly assumed that consumers "experience the same organizational touchpoints and view these touchpoints as equally important" (p. 143). In reality, the value judgement of touchpoints and channels varies along the decision journey, as Sands et al. [30] showed. The same stands for the strength of the affective response of a consumer to a touchpoint during a particular activity (i.e., touchpoint positivity [16]). While consumers could have had a particular feeling or value evaluation toward a specific touchpoint, new evidence suggests that consumers are shifting their priorities for touchpoint consumption and behavior with the pandemic. Besides purchasing more online, consumers are responding more to email marketing and are more patient regarding stock fluctuations and delivery delays [29]. Moreover, although pandemic restrictions are starting to ease, consumers feel anxiety over in-store contacts [31]. However, it is not clear whether the alterations in touchpoint importance and positivity is a situational, transitory occurrence or a long-term effect. Thus, future research should study (1) how are consumer evaluations of importance and positivity for online and offline touchpoints with the global COVID-19 pandemic, and (2) to what point are they expected to alter or be persistent in time.

Managing Internal Operations in the Supply Chain. Issues regarding the integration in logistics, order fulfillment, and product returns are urging for more investigation in omnichannel management literature [1]. Recent studies have started to address the fundamental need to coordinate activities across touchpoints and channels at different journey stages with product flow [32]. With more recent touchpoints and channels, such as digital flyers, apps, and e-coupons through mobile devices, more cross-channel behaviors are evidenced, and firms are providing cross-channel services to keep up with the demand. Examples are "order online, return to store," "order in-store, deliver at home," "click and collect," and among others. However, internally, providing different cross-channel services creates tension between marketing (focused on the consumer experience through the decision journey) and operations (focused on product flow from the supplier all the way to the consumer and back—if a

return occurs) [32]. With the current pandemic, some tensions were exposed as order unfulfillment due to low stocks rose significantly [29]. Although consumers where understanding of the situation, they continued demanding proactive communication and transparency of the delivery process and delivery time at the risk of decreased satisfaction and retailer churn [29]. Recent studies have drawn attention to the need of more collaboration with suppliers (or multi-sided platforms) and distributers through more data sharing as well as more information for consumer decision-making so that minimal returns occur (e.g., [32]). Nonetheless, various online and offline delivery and return alternatives still remain, but the fear of infection from handling products in-store has led some consumers to avoid brick-and-mortar stores altogether, which makes several cross-channel services not an option for them. Thus, as can be seen, several issues currently exist for academics and managers regarding their supply chain management. Further studies should examine what should be the preferred arrange of assortment and inventory management, distribution and delivery decisions, and return policies in the pandemic and post-pandemic period that is both cost efficient and allows customer satisfaction.

Utilization of New Technologies. Although the effect of mobile device usage in current touchpoint and channel decisions is still an under-studied domain [2], in the new era of the Internet of things (IoT), where connectivity with and between people (consumers, firms, and social networks), objects (smart and less smart products such as lights, Amazon Echo, and smartwatches), and physical environments (importance of apps to link to the digital space from any location to optimally navigate the physical environment) becomes central [33], it is undeniable that mobile devices have a crucial role in consumer purchase decisions. In the retail environment, they allow consumers to create shopping lists, search products and prices, contact different retailers, compare multiple items, purchase products, and satisfy post-purchase activities, such as product review sharing, without time or location restrictions [13]. However, in the pandemic situation, new technologies based on artificial intelligence have the potential to be given increased developing attention in complementary with IoT. IoT, for example, already provides contactless transactions, but automatic transactions that automatically charge the price of products from the consumer's account as they leave the store with products [3] may decrease contact with store employees and consequently the sense of contagion risk. Also, since online shopping has significantly grown (increasing the potential for operational failures), virtual reality (VR) technology may drastically transform the trial of products. Consumers can obtain better product information which reduces product returns [32]. The usage of drones for delivery is also promising, as a demand for this service has peaked. However, these new technologies are in their infancy, and little is known about their influence on consumer experiences and internal supply chain design. As such, further research should study (1) how can technologies based on artificial intelligence (e.g., IoT, VR, virtual assistants, robots, etc.) affect consumer decision-making during the decision journey, and (2) how can these technologies complement and be integrated with existing online and offline touchpoints and channels.

25.4   Conclusion

In a world that witnesses an ever-increasing number of touchpoints and channels, examining and structuring the touchpoint and channel constructs at the most primary level is the very first step for academics and managers to understand and influence consumer experiences and decision journeys. The emergence of the global COVID-19 pandemic, however, has created an additional pressing need to analyze divergencies in touchpoint and channel consumption, and reflect upon the changes that firms are facing due to altered consumer behaviors. This paper sheds light upon the literature and emerging issues surrounding touchpoints and channels. Specifically, it developed a systematic understanding of touchpoint and channel definitions, the classification of touchpoints, the strengths related with given touchpoint types, and how these strengths make specific touchpoints more appropriate for particular moments in the consumer decision journey. Also, emerging issues associated with the COVID-19 pandemic were identified and directions for future research discussed, namely understanding changes in touchpoint evaluations, rethinking and managing internal operations, and accessing the utilization and effect of new technologies in decision journeys.

This paper provides both academic and managerial implications. Academically, the paper offers a structured treatment of the touchpoint and channel constructs which systematizes recent knowledge in this literature current. This systematization is valuable to inform researchers in the omnichannel retailing field regarding distinctions, diversity, and classifications among touchpoints and channels, which has been a recently expressed research need (e.g., [4]). From a managerial standpoint, besides providing a systematic analysis that may assist managers in targeting consumers at the right moment in the decision journey through the right touchpoints and channels, discussing emerging issues specifically in the rapidly changing pandemic context where many firms seem disoriented can guide managers in seeking better business models. The suggestions for further research should assist both researchers and firms in finding avenues and opportunities to enrich omnichannel literature.

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Chapter 26
Which is More Shocking: Investigation of Improper and Morally Offensive Communication

Check for updates

Nazrin Aliyeva and Vaida Kaduškevičiūtė

Abstract The purpose of this study is to analyse how shocking marketing communication is perceived by consumers and how it influences their intention to spread positive and negative word-of-mouth (WOM). Theoretical analysis revealed that in order for consumers to spread WOM they need to form an attitude towards the communication and the attitude is influenced by perceived level of shock and norm violation. Data collected from 322 respondents in Lithuania and Azerbaijan shows that chosen set of factors has a significant impact towards WOM. Moreover, two different appeals were chosen for research in order to analyse the impact of communication content to consumer's perception: moral offensiveness and impropriety. Research reveals that morally offensive communication is more effective in the case of WOM than communication containing impropriety components. Nevertheless, results show that it is more likely that negative WOM would be shared instead of positive WOM.

26.1 Introduction

Everyday, consumers are exposed to the impact of ads as buyers who need to make a decision. Consumer's reactions and actions in relation to ads depending on the content that they see and on the principles that are inherent in them since childhood. Ad is considered as a special form of the communication process. The advertisement itself creates the desired images to get the attention of the customer [1], convincing them of the need and ability to make a purchase, while unobtrusively and effectively forming their desire to buy the advertised product. The prospective buyer establishes relatively strong mental associations, which are called communication effectiveness [2]. Mass communication is generated and transmitted through the media where the advertisement is transmitted through different channels like television, newspaper,

N. Aliyeva (✉) · V. Kaduškevičiūtė
Vilnius University, Saulėtekis av. 9, 10222 Vilnius, Lithuania
e-mail: nazrin099@icloud.com

V. Kaduškevičiūtė
e-mail: vaida.kaduskeviciute@evaf.vu.lt

magazine, radio, or the Internet in the modern world [3]. According to Andersson and Pettersson [4], since early times people have used a special scheme for transmitting and receiving messages so that it is effective. It all starts with the transmitter who creates the message that uses different words of the sentence or action in order to influence the buyer in a certain environment. The message is generated and transmitted through the media where the message is processed and transmitted through different types of communication [4]. Consequently, the person who receives the message reacts to it differently: their character, behaviour, or perception of various factors as a whole depends on it [5].

The shocking effect in communication is not just an attempt to touch upon topics that are more or less "taboo" in the cultural paradigm of "decent society" (sex, violence, sadism, perversion, etc.). This is a fundamental and deliberate violation of the taboo, the creation of texts or illustrations that provoke indignation among the ordinary representative of a particular culture. Why do ads resort to such tricks to attract customers? There is an opinion that shock removes any blocks; it forces, at a minimum, to listen and inspect, and as a maximum, to think [6]. As Fred (2008) claimed, in 1930, major studies were conducted in relation to opinion and behaviour in advertising. Since that time, advertisers started to use themes and appeals in their advertisements, which began to increase from 1960 until 1970 [7, 8]. Despite the fact that the amount of shocking communication research is quite sufficient, the fact that nowadays shocking and norm violating advertising appeals are living their renaissance and getting new forms in the sense of content used, and it is important to speak about this again.

Considering the discussion above, the purpose of the paper is to analyse and research how shocking marketing communication is perceived by the audience and shared by WOM (en. word-of-mouth).

26.2 Literature Review

26.2.1 Definition of Shocking Communication

Advertising was considered as an ordered, codified, "normal" world, evoking a sense of security and comfort among people. However, in the twenty-first century, instead of perfect image and positive emotions, marketing communication is increasingly focused on completely different creative paradigms. Everyday, people get exposed to different types of ads which attract their attention due to the unexpectedness. Therefore, unexpectedness is the main contributor when shocking ad captures the attention of people [9]. The complex of such "negative" techniques has received the name "shock" in the professional marketing environment, and the use of this appeal has recently turned out to be so active and at the same time often unjustified. One of the tasks of shock in marketing is to engage the consumer's memory. According to the study by Banyte et al. [10], human memory remembers certain elements of

the advertised product that helps in preserving the associations related to ads for a longer effect. It was proved that people do not try to remember ad that carries negative emotions, they attempt to reject shocking communication, however, and it is still gaining a strong sensitive form while influencing the consumer [10].

Shocking communication is potential and rather intentional than occasional, impact on a person trying to revive his feelings and offend them [11]. Additionally, Dahl et al. [6] proposed that the process of the offence is created by norm violation—it may be non-compliant with the law or custom, and, therefore, is contrary to moral and social principles. Another designation of shocking communication is instinctive fear that guides and controls our thinking (Michael and Zahra 1988). People, responding to fear, create internal anxiety and tension, forcing them to look for a way to get rid of this feeling, for which marketers begin to use functions to stimulate the process of customer interest. There are also allegations that irritating ads can be more effective than regular ones. Irritating ad can distract a personality and involve them more in the effect and intense persuasion (Buzzone 1985). Additionally, the researcher proposed that shocking ad can provoke and cause "displeasure and instant impatience", which is a stronger feeling than just disapproval of the advertising (Buzzone 1985).

26.2.2   Appeals in Advertising

One of the main goals of advertisement is to raise the attention and interest of the target audience, which is not easy in the modern world if only the desire to stand out at is a driving incentive in the search for non-standard tools and forms of promotion of goods and services. The growing popularity around prohibited or censored advertising increasingly provides such an advertisement a "second life" and encourages the client to distribute it [12]. As a rule, consumers react negatively to some of the shocking communication elements and sharply criticize what they have seen as cruelty, deliberation, etc. At the same time, while condemning and discussing the negative components of shocking ads, some consumers inevitably communicate with others about the advertised product. Thus, in addition to direct attention to the product, the purpose of such ads is to generate sensation and scandalous publicity through discussion of the advertising campaign, which also causes additional interest in the advertised goods and services [12]. In addition, due to the fact that consumers surrounded by numerous advertisement messages at some point become saturated and stop responding to them, in the ongoing "war" for the attention of the potential consumer, provocative and at the same time shocking communication methods are used. As a result, such kind of advertisement is getting more attention from consumers [13]. Therefore, the concept of "provocation" in advertising is broader and involves shocking the consumer by stimulating his extreme forms of expression of feelings and emotions, as well as capturing his attention with "surprise" by using various advertising appeals [6]. The classification proposed by Dahl et al. [6] seems to get quite a lot of attention among the scientists in literature and therefore is recognized across the world. According to a scientist, there are seven types of shocking

appeals which can be used to shock the customers: disgusting images, sexual references, profanity/obscenity, vulgarity, impropriety, moral offensiveness and religious taboos.

26.2.3   Effectiveness of Shocking Advertising Communication

The effectiveness of advertisement is evaluated by its perception. Communication for different age categories is controversial and advertising agencies should consider the fact that for a certain age category this advertisement may not seem as shocking as for another. Culture also affects the perception of the shock side of advertisement. For example, the nudity used in ads can be beneficial in a culture like Germany, but too provocative in Saudi Arabia that it will damage the perception of the brand and consumer attitudes towards ad [14]. Urwin and Venter [15] found out that effectiveness of shocking advertising can be measured by level of shock, norm violations and memory recall.

Level of shock According to Urwin and Venter [15] the level of shock is usually perceived from the side violation of values will not be attractive enough to achieve the goal of processing communication from the consumer's side. However, Klara [16] said that ads which contains a large amount of shock or insulting leads to the fact that the consumer is simply disappointed and will treat it with neglect. This disgust leads to the fact that the consumer will ignore advertisement in order to save themselves from discomfort, thereby not paying attention to the brand and product [4]. Negative emotions of the consumer are directly related to moral standards and taboos, so in order to attract the attention of consumers and improve the memorization of advertisement, and the same brand, there should be a moderate level of shock [4]. Speaking about emotions, consumers experience includes making decisions leading by their emotions. Therefore, the attitude towards different types of advertisements can radically change based on the emotions evoked, which can be either negative or positive. A study by Moore and Harris [17] claims that consumer's level of emotional intensity may differ in terms of provocative appeals in advertisement which affect the attitude formation. Most recent research by Panda et al. [18] states that attitudes are composed of cognitive and affective components. A cognitive attitude includes logical arguments for deciding in favour of a product or not. Affective, however, focuses more on the benefits of products and how this product can fulfil the desires of the consumer. Thus, the emotional appeals used in advertisement strengthen the position of the brand, as it acquires a special difference in the market [18].

Norm violation. Violation of norms refers to the problem associated with public morals and beliefs. The context of shock communication is usually contrary to public standards that vary depending on demographic segmentation. When a violation of the norm is being discussed, it can be taken as a starting point the idea that the shock of an ordinary person is caused by words and images that come in gross contradiction with certain cultural taboos, entrenched in his subconscious, or obscene sexual references, vulgarity, violence and profanity. According to Dahl et al. [6], social groups determine

acceptable and unacceptable behaviour, and at the same time, consumers begin to understand certain rules while interacting with these groups. This range of acceptable and unacceptable behaviour is used to evaluate objects, ideas, actions of people during the exposure to the advertisement (Dahl et al. 2003). Consumers usually respond to the norm violation by feeling uncomfortable, embarrassed, or even anger because of unfair treatment. If advertising causes the consumer a feeling of anger, then it is considered as a violation of its norms. Even though there are consumers who tend to forward the viral content in an advertisement. In their studies, Brown et al. [19] argued that the provocative nature of communication is the main reason for the effectiveness of its distribution. They have found that the emotional component of the consumers in relation to ads in which violence with a humorous note is shown causes great involvement [19]. Besides that, the violation of the norm in a commercial context determines the attitude of consumers. According to Aggarwal [20], violations of the norms in the commercial environment have the opposite effect than in the social one, thereby proving the fact that the commercial environment creates its own norms that as a result determine the attitude and behaviour of consumers [20].

26.2.4 Attitude Towards Ad

Consumer's attitude was considered as a general assessment of a product, brand, or advertisement formed on the basis of characteristics in relation to the object (Dube et al. 2003). In their studies, they divided the changes in a consumer's attitude into two categories of processes: a cognitive process that can be represented as a logical and meaningful sequence of information processing actions, and effective process of mental operation that cannot be modelled in a reasonable way. These are processes of an emotional-sensual attitude to life and interaction with the world, oneself, and people. Also simplifying, these are usually feelings and premonitions, desires and impulses, impressions and experiences (Dube et al. 2003). Emotions have always been the main component for the consumer, who is exposed to shocking advertising. One of the hypotheses of the growing volume of shocking appeals is the assumption that any advertisement should be emotional in the first place [21]. Therefore, shocking advertising could have positive and negative consequences depending on the consumer. Studies of Mackenzie et al. [22] developed a model that supported the considered empirical evidence, through which it is possible to explain the effect of advertising on the attitude of consumers. According to their model, the consumer's exposure to a particular ad causes a feeling of affect and cognitive thoughts. In other words, feelings and thoughts influence the attitude towards ad, its cognition, and the subsequent attitude of the consumer to the brand [22].

Besides, to consider attitudes from the point of view of the theory of planned behaviour by Ajzen [23], which determines the nature of the relationship between beliefs and attitudes. Following the theory of planned behaviour, a person's intentions are determined by three factors: attitudes, subjective norms, and control over behaviour. According to Sheeran [24], the factor of control is considered important

while converting intention into behaviour. A person should have the ability to control the implementation of behaviour if they want it to be realized eventually.

26.3   Methodology

26.3.1   Hypotheses

As it was previously discussed, the awakening of negative emotions leads to an impact on the attitude; therefore, the proposed hypothesis of the impact of the level of shock on the attitude towards the ad is based on Moore and Harris [17] findings. Regarding the norm violation, it was previously proved in the studies of Aggarwal [20] that the norm violation in commercial context will play a role in the attitude of the consumers. Therefore, the following hypotheses can be raised:

H1a. Level of shock, created by moral offensiveness appeal has an impact on the attitude towards the ad.

H1b. Level of shock, created by impropriety appeal has an impact on the attitude towards the ad.

H2d. Norm violation, created by moral offensiveness appeal has an impact on the attitude towards the ad.

H2e. Norm violation, created by impropriety appeal has an impact on the attitude towards the ad.

The attitude towards advertising forms certain outcomes among consumers, shocking advertising frequently causes a negative outcome, however, in order to receive moral satisfaction, the reaction of the consumer to shocking content can lead to a positive perception [25]. Thus, a hypothesis is proposed in order to find out how the attitude towards a shocking ad can affect the spread of positive or negative word-of-mouth.

H3a. Attitude towards the ad, formed by moral offensiveness appeal has an impact on spreading positive WOM.

H3b. Attitude towards the ad, formed by impropriety appeal has an impact on spreading positive WOM.

H4a. Attitude towards the ad, formed by moral offensiveness appeal has an impact on spreading negative WOM.

H4b. Attitude towards the ad, formed by impropriety appeal has an impact on spreading negative WOM.

26.3.2   Measurements

The quantitative questionnaire was constructed from questions measured using a five-point Likert-type scale anchored on 1 (strongly disagree) to 5 (strongly agree).

First of all, the level of shock was measured using an adapted short version of viewer response profile (VRP) which consisted of 20 items adopted by Strasheim et al. [26]. In order to purify the scale (increase one's reliability, three items were removed, which allowed to increase Cronbach alpha meanings in both cases of ads). Other scales presented good reliability scores, therefore, no statements were removed. To continue, norm violation was tested using feeling's scale adopted from Edell and Burke [27]. In order to measure attitude towards the ad, the three semantic differential scales adopted from MacKenzie and Lutz [28] were used. Finally, the spread of WOM was divided into measuring the positive and negative outcome. Scales for measuring WOM were adopted from Alexandrov et al. [29].

26.4 Methodology

Research was implemented among respondents from Lithuania and Azerbaijan. In total, there were 322 questionnaires collected. 57.1% of all respondents were women and 42.9% of men. The majority of respondents were 19–24 yr old. Interestingly, women perceived "morally offensive" and "improper" ads more positively than men. These results allow to apply findings to the women, representing two of the biggest religions across the world. In order to, apply results for bigger audiences, and sample from other religions should be included. Moreover, research showed that respondents "improper" ads barely see as shocking—only 12.8% of research participants consider this kind of advertising as shocking, contrary to popular believes [4, 30]. Meanwhile, "morally offensive" ad is considered as shocking in 87.2% of cases.

In order to test hypothesis raised, method of exploratory factor analysis was employed. This method helps to determine constructs and explains variations between variables. Correlation analysis has been chosen as a basis for hypothesis testing. The effectiveness of this research method is sufficient for this data set collected. Extraction method of maximum likelihood and Promax rotation with Kaiser normalization has been applied. KMO and Bartlett's test high significance ($p = 0.000$), Kaiser-Meyer-Olkin measure of sampling adequacy for the first ad instance is 0.839; approx. Chi-square $= 15{,}467.885$; d$f = 496$. Exploratory factor analysis for the impropriety advertising appeal KMO and Bartlett's test showed high significance ($p = 0.000$), sampling adequacy equals to 0.689, approx. Chi-square 14,854.970, d$f = 496$. Together, the five considered factors explain 82.5% (moral offensiveness) and 79.5% (impropriety) of the variance.

In order to guarantee that for research the best measurement tool was chosen, reliability analysis was implemented. Analysis revealed that all scales were reliable ($\alpha > 0.6$). First of all, the level of shock for both advertising appeals was measured with 20 items scale, resulting in high reliability ($\alpha_1 = 0.932; \alpha_2 = 0.910$). Secondly, the norm violation scale was also highly reliable ($\alpha_1 = 0.942, \alpha_2 = 0.897$). To continue, three-item attitude towards the ad scale showed high reliability, as well ($\alpha_1 = 0.947, \alpha_2 = 0.907$). Finally, both positive and negative WOM scales were highly reliable ($\alpha_{1p} = 0.942, \alpha_{2p} = 0.950, \alpha_{1n} = 0947, \alpha_{2n} = 0.945$).

Table 26.1 Level of impact on attitude towards the ad

	Sig	R square
Moral offensiveness	0.000	0.604
Impropriety	0.119	0.087

Proposed research model predicted that attitude towards the ad is impacted by level of shock and norm violation. Subsequently, attitude towards the ad has an impact on spreading positive or negative WOM. Study employed "moral offensiveness" and "impropriety" shocking advertising appeals in order to compare whether ad content has an impact on results.

Research revealed that level of shock has a significant and positive impact for the attitude towards the ad in the case when ad is using "moral offensiveness" appeal but "impropriety" does not evoke shocking feelings (Table 26.1). Therefore, hypothesis H1a is confirmed, unfortunately, H1b is declined.

Secondly, the relationship between norm violation and attitude towards the ad was investigated. Analysis results showed high significance and positive impact between two factors, which allows to confirm hypothesis H2a and H2b, as well (Table 26.2). Results also suggest that respondents perceive "moral offensiveness" ad as more violating norms than "impropriety".

To continue, the relationship between attitude towards the ad and positive WOM was investigated. Research revealed that there is a significant and positive impact between the two given factors. Consequently, hypothesis H3a and H3b are confirmed (Table 26.3). Additionally, in the cases of both ads, impact is moderately strong or weak. This allows to draw the conclusion that either offensive or impropriety content ads do not provoke consumers to spread positive WOM.

Finally, the relationship between attitude towards the ad and negative word-of-mouth was explained (Table 26.4). Research shows that "morally offensive" ad encourages respondents to spread negative WOM. On the other hand, the "improper" ad does not evoke negative feelings; therefore, respondents are not experiencing the urge to spread negative WOM. Thus, the hypothesis H4a is confirmed, and H4b is declined.

To summarize, six from eights hypotheses were confirmed which allows to draw further conclusions.

Table 26.2 Norm violation impact on attitude towards the ad

	Sig	R square
Moral offensiveness	0.000	0.961
Impropriety	0.001	0.352

Table 26.3 Attitude towards the ad impact on positive WOM

	Sig	R square
Moral offensiveness	0.000	0.492
Impropriety	0.006	0.230

Table 26.4 Attitude towards the ad impact on negative WOM

	Sig	R square
Moral offensiveness	0.000	0.763
Impropriety	0.522	0.001

26.5 Discussion, Limitations and Further Research

The study conducted among Lithuanian and Azerbaijan respondents revealed similar results to previous researches in the field of shocking advertising [15, 17, 20]. Research confirmed that level of shock and norm violation has an influence on how consumers form their attitude towards the ad. Moreover, this research agrees with previous studies, proving that attitude towards the ad could influence one's intention to spread WOM. On the other hand, this study contradicts with previous findings that advertising containing nudity elements might shock the consumers. Results show that nudity or sexual references have far less impact on considering ad as shocking than in the case of ads containing morally wrong or transgressing norms elements.

Despite the fact that this study highly contributes to scientific research, it also has the number of managerial implications. First of all, marketers should take into consideration that shocking and norm violating ads have an impact of consumer's intention to spread WOM, therefore, if the marketing campaign objective in the latter one, then using shocking advertising might be beneficial for overall campaign success. Moreover, it helps to comprehend which shocking appeals encourage positive or negative intentions towards the advertising message.

The main limitation of study conducted is that it includes only two different advertising appeals. Based on scientific literature there also exist such appeals like "disgusting images", "religious taboos", "sexual references", "profanity", "obscenity" and "vulgarity". Involvement of these appeals might help to realize the horizons of shocking advertising and how different appeals impact consumer's intention. Although previous studies emphasized the importance of level of shock and norm violation in case of forming attitude towards the ad, however, other factors having an influence exist as well. For instance, memory recall and analysed by Urwin and Venter [15]. Finally, only WOM intention was analysed. It would be beneficial to grasp how shocking advertising can contribute to increasing product sales. All these could be included as directions for future research.

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Chapter 27
Chomsky and Herman's Propaganda Model: Its Applicability to the Protests in Ecuador in October 2019

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Fernando Casado Gutiérrez and Rebeca Sánchez Figuera

Abstract The actuality of Chomsky and Herman's Propaganda Model (PM) as a valid tool is analyzed with the background of the Ecuadorean demonstrations of October 2019. For this purpose, a quantitative and qualitative content analysis of 167 sample units from (151) digital news stories and (16) TV debate shows is performed. The results confirm two hypotheses: (1) The austerity packages which triggered out demonstrations in Ecuador were supported by economic and political elites, through the mass media, notwithstanding their tremendously negative consequences on Ecuador most impoverished and vulnerable sectors; (2) The MP five filters are applicable to the studied media. In view thereof, the PM is deemed to be valid even outside the US to analyze the power-supporting behavior and propaganda performance of mass media. Further steps are encouraged toward the empirical demonstration of the PM validity in Latin America and other regions, and its legitimacy within the scientific community.

27.1 Introduction

Since its introduction in 1988 [1], Noam Chomsky and Edward S. Herman's Propaganda Model (PM) has had a hard time being accepted by the American scientific community, mainly due to its anti-elite stance. It has been questioned or, in most cases, ignored altogether [2–6]. In fact, it was subject to epistemological criticism because of the lack of insight into their operative principles and lack of theoretical-methodological contributions which would improve its scientific development [7].

Nevertheless, since the turn of the century, a fruitful number of stoudies theoretically based on the Herman and Chomsky current of thought have contributed to the expansion, updating and consolidation of the PM [8–12], and showed its applicability into various contexts, notably including the Iraq war [8, 13, 14], climate change

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F. Casado Gutiérrez (✉) · R. Sánchez Figuera
Faculty of Humanistic and Social Science, Technical University of Manabi, Portoviejo, Ecuador
e-mail: fernando.casado@utm.edu.ec

[15], financial markets [16], sports [17], the 2008 financial crisis [18], hegemonic information in Latin America [19], and nuclear weapons [20].

In 2009, Kennis applied the PM to the Ecuadorian situation, by studying the American Press coverage in 2000 of the indigenous protests against the Jamil Mahuad government. Along that line, this work analyzes the validity of the PM as a tool for analyzing the October 2019 demonstrations in Ecuador, thus, contributing to the empirical verification of the method and enriching the debate on its applicability to contemporary non-US domestic realities.

27.2   The Five Filters of the Propaganda Model

The PM proposes filters for news to pass "from their reception in the newsrooms to their media written or spoken dissemination" where they "manufacture public opinion consent" [1].

27.2.1   Filter 1: Size, Ownership, and Profit Orientation of Mass Media

It refers to the concentration processes by dominant communication holdings, facilitated by neoliberal policies [1, 7, 21–23]. Ecuador TV, newspaper, and online media are concentrated in the hands of 12 family groups and 8 holdings, all of them related by blood ties and with cross-ownership. This includes 90% control of the radio frequency by private-commercial stakeholders [24]. In view of the above, the existence of Filter 1 in Ecuador can be confirmed.

27.2.2   Filter 2: Dependence on Advertising

Media are dependent on advertising as their main source of income and sustainability. This is a mechanism of influence and pressure by advertising companies on the media. Today, roughly half of global means investment is accounted for by the Internet, advertising tending to increase in digital media and to decrease in traditional ones [25].

In 2019, advertisers in Ecuador invested $ 22.19 Mio. in digital advertising, with a projected growth of 22.2% investment for 2020, "a 4.8% of average total advertising investment, compared to other traditional media", which continue to hold a major position in the Andean country, despite the penetration of the Internet [26][1]. The

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[1]The top 20 advertiser ranking includes the cell phone company Claro (ranked 3); Banks of the Pacific and Pichincha (8 and 18, respectively); Guillermo Lasso's political movement CREO (17);

significant weight of advertising investment confirms the presence of Filter 2 in Ecuador.

27.2.3 Filter 3: Sourcing of Mass Media News

Chomsky and Herman also claim that media are dependent on the institutional supply of data by governments, companies, experts and other power-related parties. The media maintain a symbiotic relationship with the informants of the *establishment* "both for economic necessity and for reciprocity of interests" [1]. The Ecuadorian government has held a close relationship with media since the takeover of public media and the start of dialogues with private media[2] by the executive [27]. However, the applicability of this filter in Ecuador should be verified by analyzing the sample fragments in this study, namely, the coverage of the October 2019 demonstrations.

27.2.4 Filter 4: Flak or Disciplining Countermeasures (Opinion Enforcers)

This filter refers to the disciplining actions taken by governments, institutional spokespersons, advertisers or any other political/corporate stakeholders to prevent media from broadcasting any unwanted information. These actions include telephone calls or personal visits to the media venues, and range from "complaints to threats or punitive actions" [1].

During the October 2019 demonstrations in Ecuador, actions were taken against dissident media that fit in with the characterization of this filter. The most important was the blocking of the Radio Pichincha signal after its facilities were raided on October 8 for the alleged crime of inciting discord among citizens [28]. Radio Pichincha is a public station widely broadcast in the capital Quito, where the majority of the demonstrations took place. It was run by the province Prefecture, whose head, the opposition leader Paola Pabón is known for its affinity with former President Rafael Correa. Days after the raid and blocking, Pabón was arrested "for an inquiry" [29], accused by President Lenín Moreno of plotting a coup d'état along with former Ecuadorian President Rafael Correa and Venezuelan President Nicolás Maduro [30].

Based on the evaluation of this type of actions, the existence of Filter 4 is confirmed in the context of the October 2019 demonstrations.

Lasso has been running for presidency successively since 2013 and now is preparing a new candidacy for 2021.

[2]In March 2020, President Lenín Moreno announced the shutdown of public media as part of the corona crisis austerity package.

27.2.5   Filter 5: Anti-communism as a Control Mechanism (Today, Convergence Around the Dominant Ideology)

The ideological premise of this propaganda system is anti-communism. The label "communism" has been used as stigma to discredit the dissenting voices of the liberal democratic representative system and the free market economy. Anti-communism has had a comeback after of the emergence of the so-called twenty-first-century socialism, embodied in Ecuador by "Correaism". Carañana [7] would rather speak of Convergence in the Dominant Ideology, since this ideology is key to the naturalization of all the previous filters, by fostering a type of information aligned to the interests of the elites.

As was the case for Filter 3, the applicability of Filter 5 in this case should be verified by analyzing the sample fragments.

27.3   Background of the October 2019 Protests in Ecuador

On Tuesday, October 1, 2019, the President of Ecuador, Lenín Moreno announced the enforcement of Decree 883, which involved a series of economic measures [31] in the midst of an economic crisis and endeavors to obtain a credit from the International Monetary Fund (IMF). One of the most important was the liberalization of fuel prices, which had been subsidized for more than four decades. At the same time, compensatory measures for the most vulnerable sectors were announced, but never actually were materialized into executive or legislative actions.

The lack of compensatory actions had an immediate devastating impact on the economy of many Ecuadorian families, given that 8.9% of the population, that is, 1.6 Mio. People, lives on one dollar a day, in extreme poverty, whereas 25% of the population, i.e., almost 5 Mio. People in all, live under income poverty conditions [32].

Faced with the immediate increase in the costs of transportation and basic food products, the response was a strong social protest that began the day after the measures were announced, on October 2, and extended over 11 days, until October 12, when the government decided to withdraw the decree and entered into dialogue with the leaders of the protest. The protests took their toll—according to the Ombudsman's Office [33] there were 11 casualties, 1192 arrests, and 1340 varyingly injured people. In addition, economic losses amounted to $2.5 bn [34]).

After the first day of protests, a state of exception was decreed, followed by partial curfews, all of which received strong criticisms by the Ombudsman [35]. The state of emergency was maintained despite the repeal of the Decree and the deactivation of the protest [36].

During the protests, the persecution of the leaders of the Citizen's Revolution political movement, known as "Correaists" (followers of former president Rafael

Correa), was intensified. They were repeatedly stigmatized by the national government on radio and TV stations and, after the start of the negotiations, several arrests were made, notably including the prefect of Pichincha, Paola Pabón and two of her collaborators. Fearing other possible detentions, three assembly members of the "Correaist" party requested asylum at the Mexican embassy in Ecuador [37].

Several voices raised against the repressive actions taken by the Ecuadorian government to impose economic adjustment measures, including that of Noam Chomsky himself, one of the minds behind the PM [38].

27.4   Methodology

Documentary review is combined with a quantitative and qualitative retrieval and content analysis of the chains "vandalismo/violencia", "correísmo" and "medidas económicas" ("vandalism / violence", "Correaism" and "economic measures"), within the journalistic pieces that make up our sample. In this analysis, two hypotheses were tested:

1. The austerity packages were encouraged by the economic and political elites, through the mass media, notwithstanding their tremendously negative consequences on Ecuador most impoverished sectors.
2. The five MP filters are applicable to the studied media.

The sample has been taken from four major media: El Comercio and El Universo (digital press); Ecuavisa and Teleamazonas (TV). The sample includes press opinion columns and editorials, as well as the TV debate shows "Contacto Directo" (Ecuavisa); and "Los Desayunos de 24 Horas" (Teleamazonas).

The study units include 16 TV shows broadcast during the protests (8 for each channel) and 151 journalistic pieces published in the newspapers analyzed. The sample covered from October 3 (the day after the economic measures were announced) to October 14 (the day after the start of conversations between the government and indigenous leaders, and the repeal of the measures).

27.5   Analysis of the Results

Out of the 151 opinion columns and editorials published in the study period, 114 (75%) were related to Decree 883 and/or its aftermath. The breakdown by news genre shows that the economic adjustment and its consequences were addressed by all the editorials (22), and by 80% of the 76 opinion columns from El Comercio, and 65% of the 64 columns from El Universo.

A qualitative analysis shows that the most frequent topic in editorials was vandalism and violence after the protests. This was the case in 14 editorials, 2 of them focusing on Correaism's responsibilities as a secondary topic, and another 2,

Topics in editorial columns
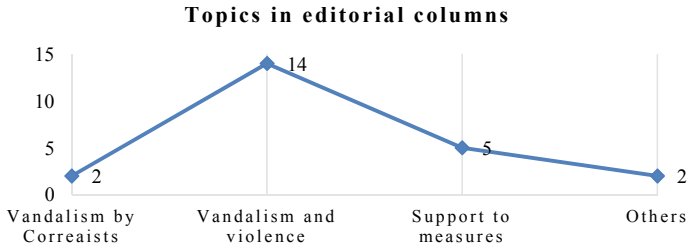
Fig. 27.1 Topics in editorials about the October 2019 protests in Ecuador

as the main topic. Rating as the second most discussed topic is the support for the government's economic measures (Fig. 27.1).

In opinion articles, support for economic measures was the highest rating topic (32 articles), followed by violence and vandalism (26 articles). A significant number of publications (17) held former President Correa and the so-called "Correaists" responsible for such actions, including promoting a coup (Fig. 27.2).

TV show hosts and interviewers were observed to follow an editorial line supporting the economic measures. The same political trend was noted in two-thirds of the interviewees, mainly government representatives, followed by the corporate stakeholders and analysts. However, one-third of the interviewees, including representatives of workers and haulers and, to a lesser extent, the indigenous sector, were against the measures. All the commentators and guests agreed on positions contrary to "Correaism". No spokesperson for this political movement was invited to the analyzed programs (Fig. 27.3).

A total of 7 presidential messages were broadcast simultaneously throughout all the TV chains between October 2 and the day after the opening of a dialogue, October 14. In 4 of them, the President of the Republic accused his predecessor Rafael Correa and the Venezuelan president, Nicolás Maduro, of having rigged the acts of vandalism and violence, though he never produced any evidence thereof. Another recurring argument was that the economic measures were aimed for the benefit of the poorest and that they would help put an end to the maffia-led smuggling of fuel.

Topics in opinion columns
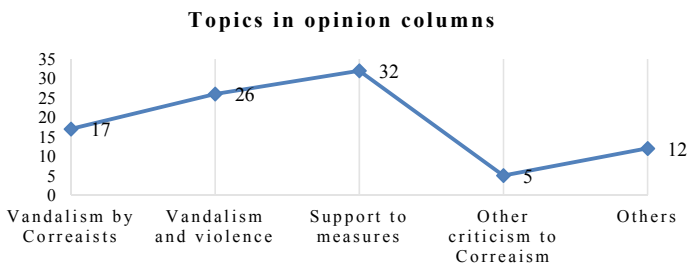
Fig. 27.2 Topics in opinion columns about the October 2019 protests in Ecuador

TV spokesmen positions
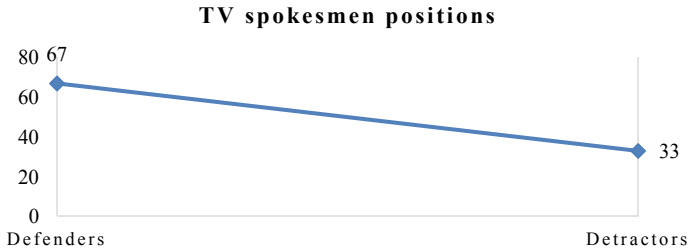
Fig. 27.3 Stances of TV spokesmen in relation to the economic measures announced by the Ecuadorian government

At no time, during the studied span of time did the government accept to retrace their steps about the fuel price liberalization.

27.6 Applying the Propaganda Model to the October 2019 Demonstrations in Ecuador

27.6.1 First Hypothesis

The first hypothesis posits that the austerity packages were encouraged by economic and political elites, through the mass media, notwithstanding their tremendously negative consequences on the most impoverished sectors. Its formulation is based on Chomsky and Herman's [1] assertion that the consensus of the elites is reflected in the media compliance.

In light of the results obtained in the quantitative and qualitative analysis, the media took a position of total collusion with the political and economic power in reinforcing and disseminating their narratives. The liberal measures were presented as necessary and appropriate, however, painful for many. Spokespersons of the economic adjustment plans populated TV shows, with interviewers reinforcing their statements. This same stance was replicated in the press editorials and opinion columns. Critical voices were minority in debate shows and almost non-existent in the press, despite the widespread protests in Ecuador.

27.6.2 Second Hypothesis

The second hypothesis was tested over two stages. The first one focused on the documentary review, where three of the five MP filters, i.e., ownership, dependence on

advertising, and disciplining countermeasures, proved to be applicable to the Ecuadorian media. The second stage, based on the quantitative and qualitative analysis of the sample units during the October 2019 demonstrations, revealed the following:

The existence of a sourcing filter, arising from the official narrative, which fed major spaces in TV shows and press editorials and opinion columns. A constant presence of government sources and the reproduction of their speeches by the media throughout our units of analysis.

The existence of an anti-communism or ideological convergence filter, as evidenced by the support to economic measures, with an emphasis on the war on fuel smuggling discourse, and the failure to point out the negative impact of the measures on the economy of vulnerable sector families. Added to this is the topic of violence and vandalism, attributed to "Correaism" and to protesters in general, as a stigmatization strategy. The dissenting voices that could prevent the convergence of the dominant ideology had no place in the studied media.

27.7 Conclusions

The Herman and Chomsky Propaganda Model passed the test of applicability to the Ecuadorian media in the context of the October 2019 protests, once again demonstrating its validity outside the US reality. Both hypotheses have been confirmed: first, the media were proved to have provided support to the liberal economic measures that triggered the protests. Mass media were at the service of power elites, at the expense of the interests of the great majority. This turns out to be a recurrent situation where the preservation of the *status quo* privileges is at stake. Secondly, the different MP filters proved to be useful for analyzing the media propaganda function. Filter 5 was especially relevant to identify the convergence of these media with the liberal ideology and the criminalization of actors opposed to it, which were represented as violent and vandalistic, and stigmatized as "Correaists", a stigma which also helped construct a scapegoat for the October 2019 protests in Ecuador. Future studies, also framed in a sociocritical approach, could add further empirical evidence for the applicability of the PM in Latin America and other regions, consolidating thus its validation within the scientific community.

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Chapter 28
Omnichannel Marketing and Consumer Behavior

Anabela Félix Mateus

Abstract Consumer behavior has always been an algorithm for a company's success. We are in a transition phase and this is where we stand: the interpretation and opportunity of a more humanized Web, which does not mean the abandonment of technology. If production once dominated its desires, today, thanks to technological developments and the introduction of recent digital media, a stage has been reached in which communication and, in particular, marketing, had to bend before the power that the current Consumer 5.0 holds. We are at the threshold of Web 5.0, an almost emotional Web but aware of your feelings. Omnichannel marketing allows a privileged way to fulfill wishes and emotions, with personalized options to choose from, without the hassle of an exhaustive and problematic search. The use of online services by companies allows them to show what they have to offer, in the widest possible way, but simultaneously aimed at the customer they want to reach. With the omnichannel strategy, all points of contact with the customer are developed in order to optimize the relationship between company and customer. In that way, Web 5.0 will return to the moment when emotion overcame reason, due to the absence of technological means. With that, we believe we will return to a moment of communication essentially human, but now characterized by the contributions of technology that, naturally, will become an intermediate medium of human and communicative relationships.

Nomenclature

T_S	Inner cylinder surface temperature (°C)
a	Vertical dimension of the inner cylinder
b	Horizontal dimensional of the inner cylinder
a/b	Aspect ratio
g	Gravitational acceleration, m s^{-2}
k	Thermal conductivity, W m^{-1} K^{-1}

A. F. Mateus (✉)
FCT, CEPESE. Lisbon, Lisbon, Portugal
e-mail: anabela.mateus@netcabo.pt

γ Kinematic viscosity, m^2 s^{-1}
β Thermal expansion coefficient, K^{-1}
Pr   Prandtl number
h Average heat transfer coefficient, W m^{-2} K^{-1}

28.1 Introduction

In this article, we reflect on the experience of channels that promote buying and selling, from a perspective inserted in the most current concept of marketing: the omnichannel strategy. Today, omnichannel assumes a top role in the field of communication strategies in companies. An integrated communication management strategy with the construction of a unique organizational message through several communication tools. In a strategic communication perspective, there is an urgent need for a balanced coordination of the binomial digital communication/personalized treatment. We are at the threshold of **Web 5.0,** an almost emotional Web that is more aware of its feelings. We live in an increasingly digital world, but an era in which the Web has to submit to the demands of consumers, precisely through the development of digital technology. The importance of the "**consumer experience**" is increasing and the knowledge he gets with its **buyer journey** gives him this power.

28.2 The Consumer of the Twentieth Century and Technological Developments

The majority of "offline" shoppers are often influenced by "online" information, through the large amount of research they do there as well as information that reaches them. The power acquired through state of the art mobile technologies, and the speed with which information spreads through the Internet, grant them this facility. In order to reach this state, there has been an evolution of the concept and practices, from which technology stands out, which attributes a more decisive status within a company.

28.3 Marketing Strategy in the Framework of Technological Evolution

Technological evolution is considered to be a subject in constant development and susceptible to take varied directions. The implementation of the Internet in the 1990s brought a special impact on the marketing mix. One of the main paradigms is the evolution from the **4 P's** concept to the new **4 C's** concept of marketing presented by Robert Lauterborn. It was developed and improved in the early 1990s, and it is

not possible to set a specific date for its definition. It should be noted that the 4P's of the marketing mix did not remain unchanged according to the model created in the 60's of the last century. This opened space for the creation of a new model of marketing mix, now with the introduction of the 4 C's throughout the 1990s. The most striking feature of the 4 C's of marketing is the fact that it considers the **consumer**. That is, if the 4 P's used to say a lot about the product and focused little on the customer, the 4 C's of marketing emerged to reverse this process. Consequently, it is essential that marketing considers the use of digital instruments in its performance strategies. Still, it is to be considered that the 4 P's of marketing continue to be used to explain the preparation of a good strategy. Changes being the details of each of them and its content. In technological terms, the Internet has changed the entire business landscape. With its arrival, marketing is no longer an exclusive activity of large companies, which spent a lot of money on media and billboards to advertise their products. "The digital age has brought the popularization of social networks and new forms of relationship" [1]. To keep pace with this evolution and think of new ways to attract consumer attention, digital marketing emerges directed to the client and focused on his/her desires and wants. "The concept of *inbound marketing* is fundamental to bringing brands to the consumer." [2]. Following this evolution and the phase that we are living today, we tried to explore the omnichannel strategy within consumer behavior, in a society that is already known as 5.0. An approach that is a current strategy with relatively recent use in Portugal. Although a tendency to increase in retail trade in this country, its experiencing and use are much wider in Brazil. That is why most of the bibliographic sources presented in this article are imported from there.

28.4   Omnichannel Marketing

The omnichannel marketing concept is basically in line with the opinion of several authors. Studies carried out in Portugal and Brazil opted for the following definition: "Omnichannel is the union of all the means that connect the customer and the brand, in order to create the possibility of having the same shopping experience in different channels" [3–5].

More recently, Fonseca [6] presents us with an explanation of the concept that is a little broader and quite updated, but developed upon the same basis:

> Omnichannel is a strategy of simultaneous and interconnected use of different communication channels, with the aim of strengthening the relationship between online and offline, thus improving the customer experience. This retail trend allows the convergence of the virtual and the physical.

It works with the support of an integrated team, which is able to follow the different points of contact in any channel. For the omnichannel to really work, it is necessary that this network does not differentiate the channels and be able to deliver the solutions needed by the customer wherever he prefers.

Omnichannel is, in short, the concept of something that is in "all channels" and these channels are integrated. The channels of a company can be considered social networks, Web site, SMS, call center, virtual store and physical store (if there is one).

It appeared to meet the demand of increasingly digital customers who demanded faster responses and in different channels. To always be present and not leave anyone unattended, companies needed to integrate the various channels, which gave rise to the concept of omnichannel. As a strategy, it was created with the aim of shortening the online and offline relationship, in order to increase **customer experience** and simplify the search process. According to Carvalho and Campomar [7]: "The concept includes thinking of an experience that integrates all, from physical stores and e-commerce to mobile commerce and social commerce, appropriating the characteristics of each one".

In the blog "Vortice" [8], we can read: "The consumer 4.0 lives connected to the most diverse communication channels, so it is essential that the company develops an omnichannel communication strategy." It is the synergistic effect that can make communication more effective or efficient according to the use of techniques for each situation, but also the strategic option of the channels used. This is, therefore, a challenge for companies to modify the classic concept of marketing, with the **customer** as the focus of the strategy.

In view of the digitization and the greater offer of products and services provided by companies, it is up to communication and marketing to create effective strategies for the intended target audience, to create "contact points" and to generate satisfaction and belief on the part of consumers, creating a long-term relationship with the brand/product or company. "In order to understand and satisfy the consumer's needs, it is necessary to offer experiences and solutions during different times of using the product or service, as well as a shopping experience that has value for the consumer" [9]. A good practice in managing the customer experience is to align the service strategy across all the company's communication channels, whether online or offline, which makes it possible to customize the service to the needs of each customer and quickly address matters of interest to him—criticism, suggestions, complaints and praise. Thus, the **buyer's journey** becomes successful from the first contact with company until after-sales. This means a unification of marketing actions, and also of commercial activities through interaction between the channels, seeking to build a solid and active identity through the integrated and unified movement of the same proposal. It is a way of facilitating management in the company and providing greater satisfaction to consumers, with the use of clear, but also fast processes. In the words of Géneze, it is about: "concentrating bureaucracy on a few tasks, directed only at the platform" [10].

28.5   Marketing Strategies and Communication Channels

From the development of a variety channels to access companies (telephone sales, Web sites, social networks, physical stores…), there was a need to evolve contact

with the public and integrate it so that it became more efficient, giving space for creating the omnichannel, which globally optimizes a company's communication. The ease that the Internet has provided allowed for the development of new marketing strategies to serve its audience at the most appropriate time and place.

28.6 The Sales Funnel and the Buyer's Journey

In the marketing universe, the **sales funnel** and the **buyer's journey** are great examples used to make actions much more effective and targeted. Everything is based on the analysis of customer needs at each stage of the buying and selling process. The focus is to provide the information to the consumer at the most opportune time. The sales funnel of the path that the customer takes from first approach until closing deal, also known as a "pipeline," is one of the fundamental concepts for applying inbound marketing/attraction marketing and increasing the company's commercial results. It is essential for the buyer'**s** journey. Working with a sales funnel allows you to make decisions related to planning and the entire customer acquisition structure, allowing the marketing and sales areas to work in an aligned and predictable way, generating more efficiency in the acquisition of customers and scalability in the process.

28.6.1 The Sales Funnel

As shown in Fig. 28.1, the **sales funnel** consists of a set of steps and "triggers" whose objective is to support the purchase journey of the personas of a given organization. In Patel's simple explanation [11]: a "sales funnel is wider at the top and narrower at the bottom. It is important for the customer's journey because each step of the funnel pushes the most qualified customers to the next one and leaves aside those who do not fit in their offer." The funnel will allow you to make decisions related to planning and the entire structure of attracting customers.

> **Step 1—Problem/needs recognition**—Buyer's needs are sought here for different types of business. It is the stage of recognition of problems/needs—top of the funnel (TOFU).
> **Step 2—Information search**—The strategies used to collect the information tend to vary according to the size and the object of the purchase. Various media are used, such as Google (widely used), social media and forums to obtain recommendations. The aim is to find out more information about possible solutions to specific needs. A keyword research is done to find out what types of content should be created for the middle of the funnel (MOFU).
> **Step 3—Evaluation of Alternatives**—After searching for information, or sometimes, at the same time, as they are made, potential customers begin to compare the alternatives. Here, too, the time spent on this stage varies according to the type

Fig. 28.1 Source: SIU **s**/d

of purchase you have in mind. It depends a lot on the channels where you need to look for each type of business (MOFU).

Step 4—Purchase decision—The purchase decision is the natural conclusion of the previous three steps. The potential customer looked for any problems with that company or product, investigated their options and decided which is the best one to purchase. But there are two main factors that can make purchases difficult at this stage: negative feedback from other customers and the motivation of the potential to believe and accept that feedback (BOFU).

Step 5—Post-purchase behavior—The sales process is not finished just because a purchase has been made. This is where the sales funnel ends, but what happens after purchase is critical. If these new customers are welcomed, with personalized attention and all the necessary resources to use the product successfully, they are more likely to acknowledge to themselves that they have made the right choice. And when they are confident, they are more likely to convey their satisfaction and recommend their circle of friends the search for sellers and purchase products. Otherwise, if the buyer is disappointed after the purchase, he is more likely to ask for refunds, write negative reviews and recommend acquaintances to go shopping with the competition. On the contrary, if the product is good and the customer satisfied, the customer will help promote the product and the image of both the seller and the product will be seen on a positive light.

There are always certain actions that can be taken to facilitate the best post-purchase behavior. For example, creating FAQ content, facilitating customer support or requesting feedback on the purchase process (BOFU) [12].

28.6.2 The Buyer'S Journey

The **buyer's journey, represented in** Fig. 28.2, is the consumer's complete experience with a company, from the first contact with the brand to after-sales. This understanding allows organizations to generate value throughout the purchase process and actively participate in this trajectory, educating the market and its audience.

The **"consumer's experience"** is the result of the journey from the moment the consumer is aware of the product until, after purchase, when he becomes it's defender.

28.7 From Single Channel to Omnichannel

One of the biggest changes that have taken place with the technological evolution and adaptation to new processes is at the level of **buyer's journey**. The mix of integrated marketing communication has changed. Integrated marketing communication has as its foundation the planning of a single strategy for the various existing channels, whose objective is to maximize the impacts of communication. Integrated communication predicts the construction of a unique organizational message, through different communication instruments, respecting the characteristics of each vehicle, but with a unique content. Through an omnichannel strategy, the objective is to consolidate the "consumer experience" among the various "touchpoints" with the brand, through traditional channels and online channels. Through the omnichannel strategy, all "points of contact" with the customer are developed in order to optimize relationships. Valverde believes that in order to capture consumer's attention

Fig. 28.2 *Source* Mark Appel, 2018

knowledge of technologies and their application have a predominant role in customer service. According to him: "The use of technological tools and solutions can help to improve customer service in every way—from the first contact, until after-sales" [13].

28.7.1 Single Channel Marketing

used by companies when developing their marketing strategies with a single form of communication or sale—digital or not. It is simple to work with, considered obsolete, but has the advantage of cost and time savings. It may lose position in relation to competitors, especially indirect ones [14]. However, we believe that in a geographically limited location, with few alternatives, it may be a good option.

28.7.2 The Use of Multichannel Marketing

no longer allows you to have only a single sales or propagation channel. People are increasingly interconnected and looking for distinctive platforms and their networks. The channels are directly related to the profile of consumers and the need for their presence on platforms and social networks. The more "communication platforms" and relationship platforms users use, the greater the chances of interacting with people interested in those products and services, as defended by Sonda [15]. According to an example presented by Mazeto [16], there are users who turn to Facebook to interact informally with their friends, while using LinkedIn to deal with work matters, while enjoying their leisure time through Instagram. In this sense, the concept of inbound marketing or attraction marketing becomes very important. Today, we know that brands that are not present on several of these platforms have very few possibilities in the face of competition.

28.7.3 Cross-Channel Marketing

is a specific type of multichannel. It intends for all its channels to work as a single entity aiming toward customer satisfaction. The channels complement each other and offer a unique and relevant relationship experience, which characterizes the cross-channel strategy. In Gusmão's own words [17]: "With the help of cross channel marketing, you can align all channels to have consistent and unified communication with the customer". As an example, customers buy online, pick up at the physical store, or request it send by mail. Actions and speeches are in sync across all channels. For that, online and offline interactions should be seen as aspects that integrate the same consumer purchase journey.

28.8   The Benefits of Omnichannel Marketing

This channel is the logical evolution of the other channels, and places the customer as the center of the whole process, making the company present a consistent experience of its brand, while establishing a relationship with the consumer. The omnichannel concept brings a more evolved perspective of the multichannel. It is a vision of total integration. For the consumer, it does not matter what the means of purchase is but the experience he develops with the brand as a whole. It is in this sense that Géneze witnesses the appearance of an **omnichannel service platform:** "It allows a variety of integrated service channels, which facilitates the view of problems and processes and treats the consumer with individuality" [10]. Furthermore, it allows the company to understand the whole scenario and the most important factors of operations and processes. It facilitates management in the company and provides greater satisfaction to consumers, with the use of clear, but also fast, processes. According to Géneze, it is about: "concentrating bureaucracy on a few tasks, directed only at the platform". With a focus on the human being, Kotler considers real consumers to be "advocates" or "ambassadors" of the brand. A consumer, as a satisfied customer, influences another with the experience he had of the product and the brand and, for this reason, he is considered an "advocate" of the brand, the best that a brand can have. In the book "Marketing 4.0", (2017), Kotler addresses the change in consumer behavior, as well as the potential to be "ambassadors" of the brand:

> (…) the fact is that due to people being in contact with the internet for 24 h, the whole relationship took the form of Digital Communication. The process of searching for product / service information by customers / consumers, and even the completion of the business has changed. In most cases it is no longer consumers who go to traditional sales outlets, but the new distribution channels that seek potential customers through a much closer, faster and more personalized relationship with digital media, that approach the potential customer. [18]

Large companies are increasingly looking for new growth opportunities, especially with increased competition. This dispute for market attention is promoting the development of omnichannel marketing strategies. The benefits with the strategy, both for customers and for companies that invest in these technologies, aim to offer differentiated experiences: the customer is able to buy a product online and pick it up at the physical store; the consumer purchases at the physical store and receives promotional emails; offer the same service to the public in all media; for companies, it is possible to reduce costs through **unified management**; consumers are more likely to be loyal to the brand when the company offers a positive experience. It is this new perspective which characterizes Marketing 4.0 that presents the necessary strategies to follow the new industry that links the real and virtual world through technology, which characterizes the behavior and defines the profile of Consumer 4.0. According to various authors [5, 10, 19], thanks mainly to the technological availabilities it now has, Consumer 4.0 is a demanding person, expects increasingly faster and more assertive services, needs good quality of service. Therefore, the company's priority is an in-depth knowledge of the "consumer's journey" Today, the customer is more

demanding. Desires a personalized, consistent and fluid experience throughout his journey, regardless of the channel he is using.

Technology transforms customers' interaction with companies, as well as their expectations and the way companies offer their products or services. In this sense, and as Maia [20], defends the "use of secure, scalable and easy-to-use technological solutions are essential for the success of the omnichannel strategy."

28.9 Challenges of the Omnichannel Strategy

In days gone by, with the emergence of e-commerce, there was some difficulty in transporting business to the digital world, now it is about adapting both worlds (digital and physical) and the distribution channels on which they depend. A single objective, to standardize all the information present in the different channels, so that customers can benefit widely from that connection and from the sharing of data (theirs, the company and the products) that will result in greater cohesion, capable of providing the best shopping experience their customers will ever have.

28.10 Content Marketing

The modern consumer is searching for an experience that goes beyond the solution offered and, often, does not even realize that he has a problem. According to Rocha [21], that is exactly where **content marketing** comes. One of the biggest references in this theme, Copyblogger Stoddart [22], defines the concept as follows: "Content marketing means creating and sharing valuable, free content to attract and convert potential consumers into customers, and customers into repeat buyers. The type of content you share is related to what you sell." It means that you are educating people so that they know, like and trust enough to do business with you. As a summarized definition of Peçanha [2], "Content marketing is the production of interesting and provocative content to win over the customer." Content marketing will play with two crucial aspects to impose itself in the market and have the best sales. Firstly, the **quality of the content** presented and then with the **gradual and indirect persuasion** that prompts in the client. It produces valuable content when talking about the public's interests, about relevant themes, that they cause. The form it takes is notoriously strategic because it leads the consumer to search for the brand through small steps that lets him "be enchanted" with its content while he **tells stories**. Content marketing generates credibility, increases your sales and creates passionate customers for your brand. Quality content that strengthens the relationship with customers, strengthening your brand and generating sales. And little by little it imposes itself on the market due to the fame it has been generating through the content presented. Indirectly, it imposes itself before the competitors, since its content is more remembered by the customers who make the purchase. To be effective, most important of all, is to understand that

the consumer needs to perceive a <u>value</u> in the content that is offered to him. What can never be missing from the content recipe is empathy, as this is what brings the potential customer closer to the content of the product. Although it is a strategy that needs time to bring out results, content marketing is effective when it leads the customer to purchase, instead of directly pushing toward it. It is in this sense that a relationship with inbound marketing is found. Although with different methods the concepts coincide. Research indicates that 72% claim that social media posts are the main content format consumed in the content marketing strategy [21].

28.11   Marketing Communication and Omnichannel Strategy

The marketing concept is still presented today, based on the fundamentals created by Jerome McCarthy and disseminated by Philip Kotler, considered the marketing guru. The concept has gained major importance among most marketing scholars and practitioners and in the evolution of the adapted strategy over time. Although it has remained essentially the same, social, cultural and technological changes must be considered. The activity needed to keep adapting promotion and distribution techniques, where the channels used were of particular relevancy to relate to the different stages of evolution. Even so, since 1960, the 4 P's of marketing continue to be used to explain the construction of a good strategy. What changes are the details of each of them and their content. If the concept of "omnichannel" is "single channel"— through which the customer establishes meeting points with the service, whether through the physical store, call center, Web site, blog, catalog, among others—the truth is that this uniqueness is not always perceived as such by consumers. When a company is able to offer its channels in an integrated manner, the chances of remembering the brand and generating more sales are greater, as the number of loyal customers is even greater. This makes his purchase even more differentiated, **raising his confidence about the brand** and the increasing the number of loyal customers.

American Marketing Association (AMA) defines the activity as a "set of institutions and processes to create, communicate, deliver and exchange offers that have value for customers, partners and society in general," in Patel [1]. Based on this same assumption, we can agree with Castro [22], who views marketing communication as follows:

> Marketing communication sets out from the realization that the simultaneous and convergent use of various communication techniques will produce better results together than uncoordinated efforts, as each communication technique has its advantages and disadvantages, so its suitability for each task in the specific situation must be weighed.

It is the synergistic effect that can make communication more effective or efficient according to the use of techniques for each situation, but also the strategic option of the channels used. Regardless of the techniques used, we understand that it will all come down to two words: **Conquer** and **retain** the customer. "The consumer

experience is responsible for a large part of customer loyalty" [23]. Investing in a better experience for customers provides several benefits. After all, all that effort is aimed at making them more satisfied. "when they feel more fulfilled, the business gains more chances to improve: the **offered;** the **sales;** the **loyalty process** and the **brand image**" [6].

28.12 The Consumer 5.0

According to Thoma, "Today more than ever, the emergence of a new kind of consumer is evident" [24]. These are informed individuals, linked to new technologies, sophisticated, and very aware of the methods to select and purchase their goods or services. Product information is acquired through the different means at your disposal, from physical stores to mobile devices such as smartphones or tablets, through call center services, catalog or the already common use of the Web, but now simultaneously, contrary to what had been happening, with multichannel commerce. A wide range of companies starting to emerge, focusing on the problem of how to manage the relationship between customers and brands throughout all these channels simultaneously. For this, it is necessary to adapt its positioning, based on the unified management of the platforms, never losing its focus customer satisfaction, always offering him the best possible shopping experience. Regarding the potential of the omnichannel client, the results are visible: this type of consumer is always up to date with trends, either of brands to which they are and have always been loyal to, or of others suggested by friends or acquaintances, results in a constant sharing of information. If they are positive, they will certainly influence more buyers, hence, the justification for betting on this type of consumer [25].

28.13 Buyer Persona Behavior in Portugal—Brief Analysis

- An analysis of the consumer behavior profile of Buyer Persona in Portugal, led Almeida [26] to some conclusions which we summarize here:
- In general, the Portuguese adult and senior consumer is very conservative, and therefore, in some products or services he still prefers to go to physical stores, especially if the nature of the business is relational.
- Examples of products and services highly sought after on offline channels, by Portuguese buyer personas over the age of 50, are:
  - Financial products (prefer to physically go to their branch)
  - Supermarkets, convenience stores, fishmongers, butchers, coffee shops and restaurants (because they are highly relational and "neighborhood," because it has been a routine for many years and because they understand that they are better served.

- – Household appliances and technology (like to go to stores where they watch the product and get personalized advice in the act of pre-sale);
- Car stands (motor vehicles are, in general, purchased offline, largely due to their perception of risk and high involvement);
  - – Numerous other products and services fit this buyer persona profile well.
- What still happens to a large percentage of consumers is that they go to their store to see or touch the product and get personalized help. Then, already at home and decided on the purchase (because they liked what they saw), they compare prices on various digital platforms such as e-commerce stores or online marketplaces (such as Amazon or Ebay) and make the cheaper and more convenient online purchase.
- Ferreira [27] also states that: "In 2018, a study conducted by the Institute Marketing Reports Research came, at the Retail Innovations Conference 2018, to demonstrate that "most Portuguese people still make their purchases exclusively in physical stores, however, there is a significant part that simultaneously also buys online".
- Burke [28] contributes with his interpretation: "Portuguese companies are still not advanced in view of the trend toward decentralization of service provision. Although we have some examples in the national territory of how they should adapt to the new behaviors and needs of their consumers, the reality is that more than simple efforts are needed so that the vast majority of companies/organizations are able to overcome obstacles to the implementation of an omnichannel strategy". However, he mentions that "the Internet has undoubtedly been one of the innovations that brought more changes to retail, as such, some areas that will have to adapt to these same challenges are registered."

28.14 Conclusions

Although we live in an ever-increasing digital world, there is a growing importance of the so-called **consumer experience**. The **Buyer's journey** allows the present consumer an in-depth knowledge of the product or service he pretends. The power he acquires with the potential of mobile technologies, and the speed with which information spreads through the Internet, grant it this facility. With the use of digital instruments, marketing anticipates consumer demands; with the advantage of digital instruments in hand, the consumer enters the phase of being able to demand. And if you can save time, travel discomfort and the like, you do not hesitate in the buy that offers better conditions.

The past 40 years consumer subjugation to the commandments of the Web and technology has taken place; today, we live in an era where the Web has to submit to the imperatives of consumers, precisely through the development of digital technology.

With Web 5.0, the next management challenge will be to truly adapt interactions to create rich and emotionally resonant experiences for users. Through online means you can buy any product you want, not forgetting access to almost any service: you can book holidays, trips, restaurants and others as long as you have access to the Internet. We must take into account the fact that most of these products and services are aimed at an economically privileged audience, which, more than looking for, awaits for the offer to reach them. And if these conditions are maintained, the customer becomes loyal and the brand has managed to impose itself. Companies are aware of this and how they can anticipate their stance and outperform the competition.

On the other hand, an example that we would not like to be able to present, is the very significant and very painful moment that is currently going on (1st semester of 2020) with the crisis that is plaguing the world society and that confines people almost exclusively to their homes conditioned to using Internet, as a result of the outbreak of COVID-9. Here, digital is the only solution found to face this crisis.

Anticipating the belief that philosophy 5.0 of the next era emphasizes the importance of emotions against a totally rational relationship through digital technologies, the expected deductive reasoning will be shaken by the implicit resources of that same era. And this is where the use of channels simultaneously makes a difference in a single strategy to captivate your persona. It is the new strategy of the **omnichannel** solution of the Web 5.0 era that is already entering through your door.

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Chapter 29
Digital Innovation Hubs—The Present Future of Collaborative Research, Business and Marketing Development Opportunities

Amalia Georgescu , **Silvia Avasilcai** , **and Marc K. Peter**

Abstract This article includes a review of the concept of Digital Innovation Hubs (DIH) and its evolution to date. In April 2016, the European Commission launched the Digitising European Industry (DEI) Strategy to strengthen the European Union's competitiveness in the field of digital technologies, ensuring access of any business in Europe to a nearby digital innovation centre, i.e. a DIH. It is an opportunity that is still under-researched and under-exploited. It presents extraordinary potential for access to technology, innovation, equipment and resources at a higher level than small and medium-sized enterprises (SMEs), or other institutions can access in the normal course of business operations. A DIH is a one-stop shop type of structure that helps organisations to become more competitive by improving processes, innovating products and services using digital technologies. A one-stop shop offers support services to organisations in a particular region, through cooperation via a platform partner. Support services that might be offered by a DIH include awareness building of digitisation technologies, exploration of innovations, development of visions and strategies for businesses, training, access to funds and investments, collaborative research, promotional and networking events, etc. Through a DIH, an organisation can thus connect with investors, access knowledge about digital transformation, connect users and potential partners, as well as refine their business and marketing development strategies. This article provides an overview of the concept and the opportunities for business and marketing development through DIHs. In addition, it highlights the importance of this opportunity at the collaborative as well as research and development level of an organisation.

A. Georgescu (✉) · S. Avasilcai
Gheorghe Asachi Technical University of Iaşi, Bd. D. Mangeron 29, Corp TEX 1, Iaşi, Romania
e-mail: amalia.georgescu@tuiasi.ro

S. Avasilcai
e-mail: silvia.avasilcai@tuiasi.ro

M. K. Peter
FHNW School of Business, Riggenbachstrasse 16, 4600 Olten, Switzerland
e-mail: marc.peter@fhnw.ch

29.1　Introduction

Digitisation and digital transformation are important business concepts in a dynamic and uncertain, technology-driven environment [1]. Technology can improve an organisation's way of innovating, planning, producing, promoting and selling its products and services. It also helps organisations to increase quality standards, widen the variety of goods offered to the market and drive business performance.

Constant innovation, testing, questioning the status quo and launching new ideas are requirements for an organisation in order to remain relevant for the market and its customers [2]. But technology is constantly changing, and ongoing adaptation (and potentially innovation) is necessary.

How can an organisation still be relevant and current with all the possible technologies that could help it, having in mind all the changes that happen on an almost daily basis? Is it smart to often invest in new software or hardware promoted in a specific industry? How can organisations build the strategies and capabilities to enforce their market position and develop and innovate sustainable and successful products and services?

Every organisation has a unique view and application of digital transformation depending on their development cycles, investments in digital initiatives and maturity level in the industry and market [1, 3]. However, most organisations are forced to adjust even faster than planned, due to evolving requirements from the market, and most recently, the COVID-19 crisis. They are also forced to collaborate more often, to cooperate with different stakeholders, not only for their benefit, but for the benefit of society overall [4].

On this journey, there are many ways to develop a collaborative and cooperative platform which drives and enables digital transformation, but they need to be integrated in the strategic management of the organisation and/or become part of their research and development (R&D) investments, as some of the most known and accessible business cooperation opportunities are those through incubators, accelerators, innovation hubs and other national and international types of collaborative projects or business associative structures [5].

A new initiative has been launched in 2016 by the European Commission through the Digitising European Industry (DEI) Strategy [6]. The programme's aim is to strengthen the EU's competitiveness in the field of digital technologies, ensuring access of any organisation in Europe to a nearby digital innovation centre (referred to as Digital Innovation Hubs (DIHs)) and developing the European network for these stakeholders.

29.2 The Evolution and Characteristics of Digital Innovation Hubs

Since 1959, when the first business incubator (Batavia Industrial Center) was created, the idea of cooperation and helping organisations in their start-up or innovation processes evolved [7]. In the 1980s, first in the USA, then in Europe and now at a global level, the idea of cooperation, collaboration, co-working and enabling different sectors to jointly create projects for a social or economic purpose provides a common understanding and supports the notion of an economic and academic innovation ecosystem [8]. This innovation ecosystem characterises the holistic environment in the continuous growth and development of a specific industry. However, over time, the associative entities mainly focused in helping start-up companies, while they have started to provide a higher level of support for more types of organisations and independent of industry association.

These supportive ventures and associations were developed over time as incubators, business accelerators, specialised innovation hubs, entrepreneurial co-working places, technological and/or industrial parks, transfer technology offices, clusters, industrial federations, venture capital foundations, other forms of business associations, private ordering unions [9] and collective organisational entities [10].

The evolution of innovation ecosystems is described as a high-level journey taken by the industry since the early 1990s until today [8] and continues to provide new ideas, new technologies, new software services and new cooperation opportunities (Fig. 29.1).

According to the European Commission, DIHs are one-stop shops that support different types of organisations or corporations, small and medium-sized enterprises (SMEs), non-governmental organisations (NGOs), academic institutions, institutions from the public sector and freelancers in their digital transformation journey. DIHs help organisations to "improve their processes, products and services through the use of digital technologies" [11]. They offer support in the research and development process, acting like a digital laboratory that tests technologies, software, products and services before using or bringing them to the actual market.

In the past decades, the world and its actors have embraced digitisation and innovation. Today, DIHs provide the platform for a fresh perspective in the way organisations should (and could) perceive digital innovation, and how they can adapt and apply its concepts and opportunities in a business context.

According to the smart specialisation strategies (S3) developed by the European Commission, every EU state shall have the necessary support in developing a specific industry or domain by accessing the services of a local DIH or supporting the digitisation of a region or of local SMEs. There are great opportunities to invest and develop a fully operational DIH, and thus it has the potential to become an important entity in the market, to enhance the digital innovation of a specific region, an industry or of the organisations within [12].

This need for digitisation and transformation comes from the fact that markets are changing and digital technology is influencing strategy, therefore pressuring organisation to adjust their business strategies in order to modify/renew their strategies and take advantage of their digital potential [1]. For example, following insights from a large Swiss study [1], every SME should at least have a website, develop an online marketing strategy, make use of social media and digital communication channels, leverage e-commerce (where applicable) and take advantage of software solutions such as a Customer Relationship Management (CRM), and other technologies, data and/or the cloud. This will allow organisations to connect easier with their customers, to improve their productivity and enable the empowerment of their human resources potential, to become more competitive, to differentiate themselves in the market and to outperform competitors.

The digital transformation and the appropriate use of technology allow organisations to advance faster, to reach new potential markets/clients and to differentiate their brand in the market. The use of 5G technology, investments in analytics and customer data processing, understanding digital marketing technology, artificial intelligence (AI) and machine learning, virtual reality (VR), the correct implementation of privacy laws and cybersecurity solutions, and many other new technologies (e.g. conversational AI, the Internet of things, smart city applications, drones, mobility platforms) are becoming imperative in the global market. They will define general policies or the instruments that have to be used in order to better perform in a specific domain or sector [13, 14].

These technologies are mostly neither easy nor cheap to incorporate. According to the European Commission's Annual Report, "only 1 out of 5 companies across the EU are highly digitalised [11]. Similarly, around 60% of large industries and more than 90% of the SMEs lag behind in digital innovation" [11]. As shown in Fig. 29.2, digitisation adoption in Europe is still low and unevenly distributed between large enterprises and SMEs. Depending on company size, sector and location, digital technologies can be easier incorporated or not. There are both active and inactive SMEs, i.e. "users of digital technologies and actors who are still in a waiting position or at least do not communicate their efforts in the use of digital technology" [15].

At the same time, in 2018, 10% of the EU's labour force had no digital skills and 50% only had basic or low digital skills. Overall, the competitive levels vary significantly by EU member states and, for employees, by size of enterprise [13].

In order to incorporate and utilise digital technologies, organisations need to provide training opportunities to their employees and advance their skills. They also can learn to benchmark their transformation, for instance via a digital maturity assessment, strategically plan the short- and long-term digital changes suited to their needs and encourage the development and uptake of self-learning programmes in order to update the digital skills of their employees [13]. These digital skills can prepare and support organisations to develop new business ideas or new targeted, customer-oriented business and marketing strategies [15, 16].

Considering all opportunities derived by digital transformation, there are still many organisations that do not have the financial strength and/or the strategic management capabilities to understand what type of technology to use, how much

2018-...

*5G, Smart Hardware, Robotics

*Smart Cities

*Digital and virtual transformation

*Shared Economy

*4th Industrial Revolution

2011-2017

*Web 2.0, social media networks, cloud technology

* IoT, AI, Data Processing, 3D production technology

*Private capital infusion, ventures associations , crowdsourc-ing

*Industrial e-businesses, Everything as a service (XaaS)

*Development of DIHs and funding of digital projects

*Development of virtual events and experiences

*Digital marketing, internet banking, mobility, innovative automotive industry

2000-2010

*International events to promote cooperation in the digital area

*Private-public capital investments

*Development of e-commerce market, mobile internet and the software industry

*Access to global market

*Digital innovations, mobile phones industry, smart life (real estate, banking)

1990-1999

*State funded basic infrastructure

*Software park culture evolved

*Internet enabled connectivity

*Technology Transfer Offices (TTO)

Fig. 29.1 Evolution of innovation ecosystems (own illustration following [8])

to invest and how to grow/secure their digital investments. The levels of digitisation are different according to the size of a company [1], its sector of activity and the region/country in which it operates [17].

Through the establishment of the Digital Europe Programme, investments of EUR 9.2 billion will be made in order to equip the next long-term EU budget (2021–2027) with initiatives that take advantage of digital challenges and opportunities [11].

Here, DIHs play an important role in the advancement of the EU economy and its actors. As per the EU's intent [6], DIHs will help organisations to understand, test and incorporate digital opportunities. DIHs can be part of the organisation's research and development (R&D) strategy/department or an extension of the organisation's efforts and value chain to research and innovate. Creativity will be boosted, potential business models will be analysed, collated data visualised, ideas generated through brainstorming sessions and digital technology presented, applied and tested. Basically, DIHs become creative and innovative workplaces or platforms, integrating and
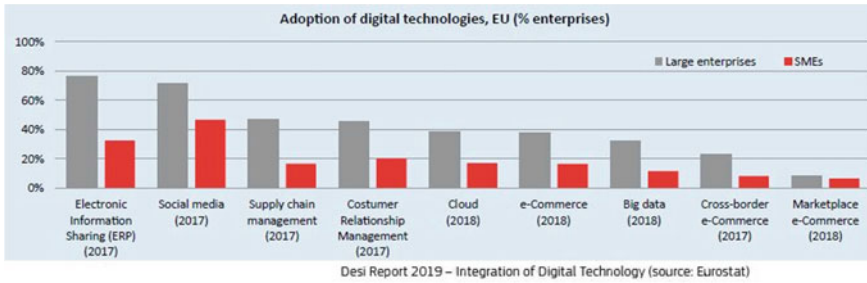
Fig. 29.2 Adoption of digital technologies in the EU across SMEs and large enterprises [17]

testing ideas in the digital age. This will transform the creative process in "a story of never-ending innovation", mandatory for the digital continuous developing world [18].

The basic five roles of a DIH are (1) to offer access to a competence centre with resources, (2) to develop digital skills, (3) to organise digital transformation experiments, (4) to mediate access to finance and 5) to create partnerships or cooperation opportunities for organisations [11–13]. These roles are interdependent and help the innovation ecosystem develop, playing an important role in the development of regional or national smart specialisation strategies (Fig. 29.3).

As DIHs develop and strengthen the innovation ecosystem [8], they are actually conceived as ecosystems of actors involved in digitisation [13], becoming national or regional platforms for the testing and the promotion of advanced digital technologies. They also are promoters of a regulatory framework adapted to the digitisation of a specific industry and promote best practice examples in order to help start-ups (or new ventures in existing organisations) to advance faster in their sector, and overcome market failures [6, 8].

At first, they act like micro-ecosystems in their region; however, they can evolve to become part of a bigger network and enter the macro-ecosystems of the business and of the global economic environment. DIHs will grow and cement their contribution to an ecosystem by further offering training and mentoring opportunities, visioning and strategy development, new workplaces, access to the latest digital technologies for experimentation and testing, specialised expertise, infrastructure and other types of services for organisations (e.g. multi-partner cooperation, best practice exchange programmes, brokering, matchmaking, innovation scouting, small groups collaborative and guided mentorship, trainings and workshops, networking and specialised events part of an integrated omnichannel and marketing communication strategy) [13, 15–17].

Overall, a DIH will offer support services to organisations (i.e. to businesses, government organisations, NGOs and academic institutions) in the digital age in order to build and test digital innovation projects while advancing employee skills, providing finance opportunities, creating an innovation ecosystem and building strategic partnerships, as well as business and marketing strategies.
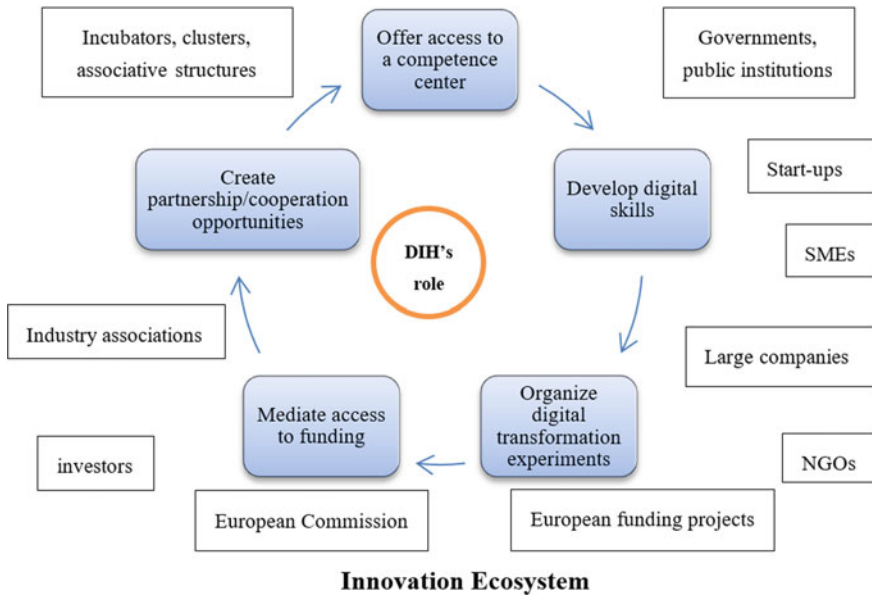
Fig. 29.3 Basic roles of a Digital Innovation Hub in the context of an innovation ecosystem (own illustration following [3, 6, 8, 12])

29.3 A Digital Innovation Hub's SWOT Analysis

As outlined, DIHs have the potential to play a strategic role in an organisation's strategy and innovation management efforts to leverage an organisation's full potential and building ecosystems in the digital age.

At its core, a DIH has a not-for-profit objective, offering different types of services to support organisations through the digital transformation. In order to ensure that they reach their target market, i.e. organisations, DIHs have to understand their role and define their objectives and deliverables with various stakeholders. DIHs require support through government funding and a network of individuals working to improve the economy [13].

From this point of view, a primary strengths, weaknesses, opportunities and threats (SWOT) analysis is mandatory for a DIH, but might also be meaningful to their customers, to understand the opportunities related to a possible collaborative digital project (Table 29.1). The SWOT analysis for DIHs is based on the available literature on DIH, including [6, 11–13, 15–17, 19, 20].

While strengths shall be leveraged and opportunities embraced, the identified weaknesses and threats might be reduced or overcome if DIHs establish a strong membership policy, and by focusing on value-added projects. In addition, they shall communicate their value and contribution to the economy and their efforts in strengthening the innovation ecosystem.

Table 29.1 Digital Innovation Hub SWOT analysis (summary following the identified literature)

Strengths	Weaknesses
• Wide range of specialised individual, corporate, academic and/or other organisational partners • A specialised one-stop shop for organisations, including in most cases a testing laboratory and a highly practice-oriented education centre • Funds available to showcase new digital technology, accessible by their members • A platform to discuss social changes and its impact to actors, corporations and the society overall • Access to a variety of ventures, in-house experimental facilities, technical expertise, experimentations and use of newest technologies • Research and innovation centre for testing ideas and other technologies before investing and actually bringing them to the market; focused on value creation and supporting organisations to become more competitive • Can be operated as a business and most likely be financially supported through a wide range of public (and private funds) • Access to offline and online virtual working places and is able to organise a wide range of professional trainings, promotional or testing events • Has the ability to develop its own innovation ecosystem and to launch ventures	• New platform/cooperation model with many actors involved • Needs financial and potentially technical support • Continuous investments and digital upgrades required • Does not focus on manufacturing, i.e. focuses on ideas, concepts and plans • Needs a highly specialised team (or network) of consultants, mentors, software developers, entrepreneurs and engineers • In many cases, it is specialised on only one specific sector or industry
Opportunities	Threats
• International networking, blended learning, training-by-doing and cooperation opportunities (incl. Cross-border collaboration, multidisciplinary and transdisciplinary approaches) • Part of an integrated and larger digital innovation ecosystem or other innovating organisations • Financing opportunities through the EU and/or other cascade funding and private venture funds • Mapping of digital skills and future needs of the market, raising awareness in sectors with low IT/digital adoption • Bridging or minimising the gap between academia and practice	• Prejudice and/or lack of confidence between the DIH members/actors • The permanent changing digital technology landscape that requires investments and ongoing knowledge acquisition • Cybernetic and security threats • Social distancing and work limitations driven by the COVID-19 crisis

29.4 Current State and Growth of DIHs

The group of first countries that supported and developed DIHs were those from Western Europe, being already part of the EU since 1993, including Belgium, France, Italy, Luxemburg, the Netherlands and Germany. Today, there are more than 500 DIHs available to organisations in Europe, of which 309 are fully operational [19, 20].

Mature countries in terms of DIH establishments, like Italy (with 30 fully operational DIHs) and Spain (with 26 fully operational DIHs), have set a benchmark in DIHs supporting digital transformation, raising competitiveness, driving innovation and building ecosystems (Table 29.2). On the other hand, late adopters or countries with a slow uptake with less than 5 fully functional DIHs are Portugal (4), Estonia, Latvia and Romania (3), and Luxemburg (1) (of course, country size and industry configuration might influence the number of DIHs). Interestingly enough, the Netherlands have invested heavily in DIHs with 23 centres in place, while Germany only has a small number of DIH with 6 established centres [20].

All EU nation states combined plan to launch 251 new additional DIHs, having in mind the current financial framework of the EU Horizon 2020 programme [20].

The Horizon 2020 programme supported digital transformation projects and networking initiatives of DIHs with around EUR 100 Mio. Per year in the period 2014–2020 through the Digitising European Industry Initiative [21]. Most of these projects help SMEs to engage easily in innovative experiments with DIHs in a cross-border context, further supporting SMEs to collaborate and develop ecosystems among them.

The first European Convention of DIHs was held in Madrid/Spain in 2017. Since then, there have been many events, combining blended learning workshops, conferences, webinars, forums and marketing events to advance the concept of DIHs [22, 23].

Table 29.2 Fully operational DIHs in EU member states [20]

Number of fully operational DIHs	EU member states
30	Italy
26	Spain
23	Netherlands
17	Lithuania
15	Belgium
13	Finland
10	France, Slovenia
9	Sweden
7	Croatia, Denmark, Hungary, Austria, Czech Republic
6	Germany, Poland

Other events organised for and through the DIHs are different types of fairs, networking events, competitions, specialised trainings, forums and galas. Some of these events have been highly promoted and have raised the profile of the digital industry [23].

In the near future, in order to further develop DIHs, a series of financing programmes will be made available as part of a massive Digital Europe Programme (EUR 9.2 billion for the next long-term EU budget 2021–2027). The EU intends to promote innovation and research excellence by attributing a record budget (EUR 97.9 billion) for the EU-wide research programme Horizon Europe; additional support to help organisations innovate with high potential technologies will be provided by the new European Innovation Council [24, 25]. This will also support marketing and communication activities of current and future DIHs in Europe.

One important role of DIHs is to make the digital ecosystem easily accessible and more transparent. They need to create awareness, encourage the digital transformation of organisations and drive innovation. Some DIHs apply multichannel strategies, including websites, social media, podcasts, video recordings, online catalogues, reports, radio and TV, print media and event marketing strategies [12, 13]. Digital platforms grow in importance for DIHs as they help create a virtual marketplace for DIH services. For example, during the COVID-19 crisis, DIHs (e.g. the House of Digitalization of the Lower Austria Business DIH Agency) helped specific SMEs to become more visible online and developed, within a couple of days, e-commerce mobile application platforms with the help of students and freelancers [26].

Most certainly, DIHs can also inspire and offer examples of best practices by publishing and promoting their results through articles, video, photographs, online or offline public presentations, further contributing to their growth. An omnichannel and marketing communications strategy will help DIHs to better promote their projects and also encourage its stakeholders to better promote and communicate their results. Today, managing physical (offline) events can be challenging because of public safety regulations. But a world without events is hard to imagine because people need social and economic exchanges and experiences through a variety of ways and channels [27]. On the other hand, the virtual reality offers several advantages and new opportunities to "enhance and also reimagine the ways in which events are delivered and experienced" [28].

Moving forward, DIHs have to think critically and innovatively to take advantage of technology themselves. With COVID-19, they need to become more creative in the way they promote and offer their services in order to grow and contribute to the served regions and ecosystems.

29.5   Conclusion

Working on your own is not always heroic. In order to unlock an organisation's potential, it is advised to collaborate, understand and leverage technology, benefit

from the facilitation of the exchange of ideas and develop innovative products or services to remain competitive in the digital age. Wisely exploiting digital skills and synergies can unlock the full potential of an organisation and can help them to innovate faster for commercial and societal benefits.

In this critical period due to the COVID-19 crisis, connecting organisations with EU-funded DIHs and upgrading the digital skills of employees is a priority, especially to encourage research to fight the new medical, infrastructure, cybersecurity and manufacturing challenges. The Digital Europe Programme will focus on financing advanced digital skills for the implementation of new technologies and will work alongside with the European Social Fund, ERASMUS mobilities and Horizon Europe for researchers [19]. Organisations must be part of these initiatives and benefit from these platforms, most importantly from DIHs.

To transform in the digital age, to remain competitive, to strengthen the creative process and to innovate require collaborative opportunities and access to the latest technology. Organisations must search for and identify the benefits in collaborating with DIHs and exploring their facilities, mentoring and learning offerings. Organisations are advised to invest in cross-border digital innovation experiments with the help of DIHs and test before buying (or building) and implementing new technologies. DIHs can support the advancement of a fair and competitive digital economy and drive strategy and marketing development in an uncertain global environment.

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Chapter 30
Omnichannel in FMCG: Digitally Enhancing Retail Consumer Journey

Filipe Sampaio Rodrigues and Ana Isabel Coelho

Abstract Consumption and consumer behavior are changing. Consumers today find more alternatives and expect consistent, integrated, and uniform experiences, regardless of the sales channel they use, while switching between channels seamlessly. Thus, the need to better integrate the digital and physical experiences in retail, i.e., omnichannel. With the proliferation of smartphones and mobile Internet, the digital media enters the buying process, gaining relevance in relation to physical stores. This is particularly true with millennials, highly familiar, and dependent on technology, particularly Millennials. Therefore, challenges arise for retailers. This paper aims to contribute to the understanding of the impact of an integrated shopping experience through the integration a mobile device. Thus, a literature review on the fields of consumer behavior, consumer decision-making process, consumer experience with the brand, and omnichannel, was made, followed by a discussion and suggestions for further research which are to be carried.

30.1 Introduction

Physical retail stores accumulate, display, and sell a great variety of consumer goods in one single place. Grocery stores have evolved into supermarkets to sell in small quantities huge varieties of goods—tens of thousands of different goods in each single store. This leads to enormous potential combinations of goods that consumers can buy, resulting in highly complex purchasing processes. Therefore, consumers have more and more choice, and the market is becoming saturated with commodities (undifferentiated products): "The Paradox of Choice—Why More Is Less" [1].

F. S. Rodrigues (✉)
ISMAI, Maia University Institute, Avenida Carlos de Oliveira Campos, Castêlo da Maia, Maia 4475-690, Portugal
e-mail: sampaio.rodrigues@gmail.com

A. I. Coelho
IPAM, Portuguese Institute of Marketing, R. Manuel Pinto de Azevedo 748, Porto 4100-320, Portugal
e-mail: ana.irp.coelho@gmail.com

Therefore, this paper aims to understand the possible impact of enhancing the physical in-store experience using a mobile app in the consumer's experience and buying process. In order to do that and provide the guidelines for omnichannel a literature review on the issues of consumer behavior, the buying decision process, and omnichannel was conducted and followed by discussion and suggestions for further research which are to be carried.

30.2   Consumer Behavior

Consumer behavior is the study of the processes involved when individuals or groups select, purchase, use, or dispose of products, services, ideas or experiences to satisfy needs and desires [2].

The scientific field of consumer behavior focuses on the wider phenomenon of how individuals buy goods and/or services: choosing, buying, using or discarding products or services, ideas or experiences in order to satisfy needs or desires [3, 4]. According to these authors, it is essential for companies to understand this phenomenon, since they aim to sell, and it is consumers who decide what they buy [4]. Marketing may only succeed when organizations understand their customers [5] and are able to bring adequate value propositions forward to them.

According to Churchill and Peter [6], in addition to the consumer's thoughts, feelings, and actions, the study of the consumer's behavior also includes all the influences to which the client is subject, also comprising all the activities directly implicit in obtaining, in the consumption and refusal of products and services [7]. Still in the same line of thought, consumer behavior consists of the entire process demonstrated during research, purchase, use, and evaluation of products and services that satisfy consumer needs [8].

Consumer behavior is not limited to the moment of purchase, but also to the moment prior to the purchase and the later, comprising a set of details that influence the consumer [4]. With this, there are no two consumers with the same behavior; however, according to Solomon [2], it is possible to find similarities in the decision-making process of this, establishing patterns of behavior which means we should not be looking for universal laws of consumer behavior but to its principles applied to smaller populations with similarities, either segments of individuals.

The use of mobile devices by consumers and the response of retailers are revolutionizing the retail environment [9]. Throughout history, commerce, a traditional activity, has been under constant transformation, but during the last decade, this change has been more accentuated. The way people consume has undergone a revolution driven by the constant development of technologies and, essentially, by the Internet [10]. Online and mobile sales channels are ubiquitous. Assuming an increased influence on consumer's buying behavior [11, 82], where technological advances are responsible for both intensified competitiveness within the industry, and by changing consumer buying behavior [12], it should be noted that smartphones have become an important part of the consumer's daily life, as they are integrated

into their daily activities [13]. The increasing use of mobile devices by consumers makes shopping an ongoing activity, requiring involvement between retailers and consumers during some critical points of the decision process, in order to provide a more customer-centered experience [9].

Now, the consumer deals with the shortage of time, demanding immediate and effective responses within the market floor, becoming a more active consumer. Thanks to the evolution and use of the Internet, it is possible to obtain more information to sell, compare, and buy products and services from any country. It is also possible for companies to know who their customers are, thus emerging a new concept in the market: e-consumers [14].

With the advent of digital marketing, there has been a change in traditional consumer behavior. Thus, for companies to remain competitive, a change in marketing strategies was necessary, making digital an important tool [15]; thus, consumption happens more and more in an online environment [16]. Now, the adoption of new technologies has changed consumer behavior [17] and the purchase process [18] where they spend more and more time online, in social networking applications [19]. Consequently, because they are a public with more access to information and technologies, they have a greater critical sense [20].

Effectively, we are facing a consumer who values news, promotions at the point of sale, and simultaneously, having a pleasant shopping experience [21]. However, technology and globalization are factors that have influenced the changes in their consumption habits [21]. Over the years, it has been verified that the use of mobile devices is growing, consequently affecting consumer behavior [22], which allows the creation of new complementary touchpoints with consumers, by the company [23]. Unlike previous generations, current consumers have access to a wide range of technologies that change their lifestyle [24]. Now, e-consumers are connected, networked, share experiences, browse, and shop through mobile platforms [25]. The fact that they are constantly connected has changed the way that consumers use their smartphones, so mobile devices are changing the way that consumers shop, both in physical stores and online stores, becoming an integral part of behavior consumer [25].

Over the years, several generations have aroused interest on the part of scholars, both for their specificity and for their importance in the evolution of history. In fact, each generation has its own characteristics due to different economic, social and political events of its time. From the perspective of Ordun and Akun [26], the following are considered main generations: Baby Boomers, Generation X, and Generation Millennial.

Since Millennials behave differently from other generations, according to Smith [27], studying them acquires importance and relevance. Millennials are an important group of consumers [28]. They comprise the first generation of "digital natives" or "Generation Y": young people who have a natural affinity toward technology and are highly dependent on it for interaction, entertainment and even for emotional regulation [29]. This generation was born between 1981 and 2000 [30], thus, age has been a determining factor in the intention to buy and buy online [31]. Millennials also have a unique impact on the world, since the use of technology and the role of the

internet allows them to be a transformative generation [32]. They are an extremely attractive generation, in addition to the undeniable attraction for consumption, they also identify consumption trends, and they are a generational group that influences purchasing [28]. They are a generation that interacts with technology like no other previous generation [33] where they grew up with Internet access and incomparable access to technology [34]. According to Erickson [35], it is the first generation in a world that was already connected to the ubiquitous technology. In fact, according to Solomon (2009), Millennials feel totally at ease with the "thumb culture," which communicates via the Internet and by mobile phone, often preferring the Internet to communicate over their own voice. Now, Millennials, as digital natives, deal perfectly with several devices at the same time and assimilate various information while listening to music or carrying out other activities, since life expectancy is compared to the explosion of various information and communication technologies [34]. In fact, this generation moves easily between the online world and the offline world [35]. According to Kim [34], this generation believes that through a few clicks, they can find all the necessary information. Thus, this generation is strongly connected to smartphones and social networks [36], sharing photos, and comments on the products that they bought and liked [37]. Social networks are vital for Millennials, as they integrate technologies into their daily lives [38]. According to Singh and Swait [39], consumers of generation Y share all aspects of their experiences on social networks, since they are considered social consumers, making the purchasing power of this generation in constant growth. Thus, the Millennial consumer spends increasingly more time using smartphones compared to other devices. In fact, Millennials first choose the product and then select the retailer [35]. However, a consumer may prefer one channel for research and another for purchase or use a combination of channels to search and buy simultaneously [39]. According to Sopadjieva et al. [40], Millennial consumers prefer to search for products online through a mobile device, but eventually buy products offline. Thus, Millennials, as a generation, exhibit distinct behavior of buying decision process, offering challenges and opportunities to organizations [41] and should be better understood.

30.3   Buying Decision Process

The buying decision process is very personal and varies according to the type of consumer, since the value and relevance are attributed to certain aspects differ [42]. Thus, along the same lines of thought as the aforementioned author, the buying decision process is divided into five stages developed by Engel et al. (1973, cit in Solomon et al. 2012) [43]: "need/problem recognition, information search, evaluating alternatives, purchase, and post-purchase behavior".

"It is increasingly difficult to please customers who want superior products and services, tailored to their needs, delivered quickly, at the lowest prices and with free additional services." [44].

However, consumers do not always need to go through all the steps when purchasing a product or service, being able to invert or omit a step, due to its simplicity or an existing knowledge or contact [44].

The buying decision process begins when the consumer recognizes a need or is faced with a problem, resulting from a multiplicity of psychological factors generated that can be activated internally or by external stimuli. Now, the first case refers to the basic needs of the consumer, such as thirst, while the external impulses refer to awakened desires that trigger the desire to buy [44]. Thus, at this moment, the consumer recognizes the distinction between the real situation and the desired state, causing the buying decision process [42].

Consequently, in the second stage, there is the collection of information, referring to the information sought by the consumer, that is, once the need is recognized, and the consumer seeks several solutions [44]. These can be internal or external, using memory, previous experiences, or the network itself [42].

Now, based on the information obtained in this information collection phase, the consumer compares all options and evaluates the different alternatives [42, 44]. At this stage, the consumer reflects on their attitudes and beliefs, as they influence the buying behavior through learning and lived experiences (Kotler and Keller 2012) [44]. After the consumer makes the purchase, the last step appears, the post-purchase behavior, where the consumer assesses the consequences of his decision [44].

Currently, there is a growing focus on the consumer experience, due to the strong interaction between companies and customers, where experiences are more complex and more social, influencing other consumers [45]. For same authors, the consumer experience is explained as a consumer journey with the company that takes place through several touchpoints in different channels, resulting in more complex, dynamic, and interactive consumer journeys [45].

According to Norton and Pine II [46], the consumer's journey consists of all interactions between the organization and the customer at any touchpoint, i.e., all and every single moment in which the customer is in contact with the organization and/or the offer, during the journey [47]. Thus, for Edelman and Singer [48], the consumer's journey is defined by the interactions decided by the customers before reaching the goal of his decision.

According to Edelman and Singer [48], the consumer's journey begins with an extensive phase of analysis and evaluation before entering the loyalty cycle, or even advancing to a new evaluation cycle that can lead the consumer to choose for a new brand. Due to the ubiquity of the digital devices, consumers are more experienced, more qualified to use technology as a tool, allowing them to easily search and compare products. Thus, the new consumer journey compresses the consideration stage and totally reduces or eliminates the evaluation stage [48].

Due to the competitiveness of the market, organizations are already beginning to define the consumer's path, instead of just reacting to the journey, in order to anticipate the consumer's wants and needs [48].

However, customer journey maps are used to visualize the sequence of touchpoints where the consumer interacts with the service. These customer journey maps allow analysis at two levels: at the point of contact and at the level of the overall experience.

This allows for both a more detail-oriented approach and a more general approach to recognizing general advantages and challenges [49].

In fact, the inclusion of the mobile internet as a new demand and purchase channel has stimulated the adoption of the digital medium during the purchase process, thus influencing the consumer's journey [39]. If in the past, retailers focused essentially on the outcome of the consumer decision process, and today, through mobile technologies, they can more actively track, trace, and influence the entire consumer decision-making process [9].

According to the authors, this shift in focus from the decision result to the decision process means an important paradigm shift for the retail sector [9]. In fact, a consumer's final buying decision is distinct from decisions made during the other phases of the traditional decision process [50], since with the use of smartphones and other devices, it allows the consumers get information and knowledge for free and easily accessible [51].

30.4   The Omnichannel

Providing a satisfactory and unique consumer experience is one of the main objectives of the omnichannel retail [52] which consequently happens whenever there is an interaction between the consumer and a certain brand [53].

"What people really desire are not products but satisfying experiences." [54, 55] define the customer experience as an internal and subjective response to any direct or indirect contact with a brand, usually occurring during the purchase. In contrast, Prahalad and Ramaswamy [56] suggest that experiences are co-created by the consumer and the company, that is, more and more customers are involved in creating value, making each meeting different [56]. Gentile et al. [57] defend that the experience is individual and needs an emotional, rational, spiritual, and sensorial involvement of the consumer. Marques [58] corroborates with Gentile et al. (2007) [57], referring that any brand has to know how to work and awaken the five senses, making consumers engage with the brand in a creative way, creating new experiences. Thus, the experiences involve the totality of the person who feels them. However, a retail experience is built by passing through the various points of contact [59] such as messages, interactive advertising, social media, NFC technology or applications for smartphones and tablets, in the different phases of the customer journey [59]. Thus, understanding the consumer journey and the customer experience over time is essential for companies, since today customers increasingly interact with companies through infinite touchpoints, forcing them to integrate various marketing functions, business, delivering and creating positive consumer experiences [45]. It should be noted that an organization can build a relationship with the consumer through experiences available on all channels used during the purchase process, at each touchpoint of this interaction [60]. Keyser et al. [61] also add that the customer experience is composed of emotional, physical, cognitive, spiritual, sensory, and social elements that highlight the direct or indirect interaction of the consumer with

other elements of the market. According to Schmitt et al. [62], experiences consist of thoughts, feelings, and behaviors in response to certain stimuli harmonized by a given brand. For Lee and Lim [63], the customer experience is an abstract concept, that is, for these two authors, an experience consists of the set of all processes used by companies to track contacts between customers and organizations.

Now, the consumer seeks to establish a true relationship with the brands, increasingly ignoring intrusive messages and forced stimuli and [64]. According to some authors, providing a good experience has positive results in satisfying it [65]. Thus, it is essential to recognize the importance of each point of contact between the company and the customer, in order to create a positive experience for the consumer [66]. In the same line of thought, Shaw and Ivens [65] state that touchpoints between the company and the consumer are the ideal occasion to provide a positive experience to the customer. However, these moments are different, according to the stage of the experience in which the client is located. Arussy [67] goes against the conception of Shaw and Ivens [65], finding that it is necessary to understand which points of contact are most striking for the client, in order to make the correct investments, since all touchpoints impact the experience of the customer.

According to Flaviàn et al. [68], recent technological developments are changing the way people experience both physical and virtual spaces. Thus, for Blazquez [17], technology is the solution to create an integrated experience between channels. According to Kumar and Reinartz [69], technology allows creating more attractive environments that, in turn, can make consumer experiences more engaging and memorable through innovations that make shopping more accessible as tablets or interactive screens. Technology allows us to redefine a store experience; however, it is up to organizations to focus on the implementation of technologies that add value and that are relevant to consumer experiences [17].

This said that the goal of omnichannel retail is to make the consumer experience as perfect as possible [18]. Although there is a need to move between channels, consumers still want to see, feel, touch, and try the product, as well as feel the atmosphere of the store [70]. This is the difference between integrating multiple different channels and building a truly omnichannel seamless experience.

"There is no such thing as mobile only. Everyone is #omnichannel" [71]

The consumer expects to obtain a consistent, integrated, and uniform service and experience, regardless of the channel used. Depending on preferences the current situation, or the product category, the consumer is willing to move easily between channels. However, retailers are often unable to provide such an experience, offering only multichannel access [70].

In the same vein, many authors only focus on multichannel behavior [72], which implies a division between the physical store and the online store [60]. However, according to Verhoef et al. [10], retail is in a new phase, where the integration of technology with online and offline retail has boosted a new business model [73] where customers move freely between mobile devices and the physical store, all with a single transaction process [70].

Effectively, the industry was affected by the appearance of several channels [73], giving consumers the ability to carry out transactions on numerous channels such as

catalogs, physical stores, Web sites, and mobile applications and face the challenge of exploring multiple synergies between channels [74].

With the growth of the mobile channel and the unrestrained use of mobile devices inside physical stores, the need to integrate channels has become even more essential. In turn, the channels have different characteristics and are not necessarily direct substitutes for each other and can be used in different ways by consumers [70]. Omnichannel strategies combine and integrate perfectly the offline and online shopping journey of consumers [75]. In fact, the fundamental nature of omnichannel retail lies in the lack of definition of lines between offline and online channels [70]. Consumers easily interact with online and offline channels to search for information and buy products [76].

Showrooming and Webrooming are prominent shopping trends among consumers in omnichannel retail [77]. Thus, new shopping activities such as showrooming, where buyers search in the store and buy online, and Webrooming, where consumers search online and buy in the store [78], have emerged through the consumer's willingness to explore channels with distinct characteristics and to take advantage of the opportunities offered by an omnichannel environment [79].

In omnichannel retail, showrooming and Webrooming behaviors combine the opportunities of different channels—online, mobile, and offline. In fact, in the omnichannel experience, showrooming and Webrooming are the most common [78]. According to Fernández, Pérez, and Vázquez-Casielles [80], Webroomers emerge as individuals who engage in a buying process over time, using the various online touchpoints along the way, to find detailed information and examine this information from reflective shape. These are customers who, above all, consider attributes directly related to a product as important decision criterion. Sometimes, this type of consumer may have more technical knowledge, since he is considered a "smart buyer," therefore, this type of consumer is not easily influenced when he enters a physical store. In contrast, although showroomers select the retailer that offers the product at the desired quality level and at the best price, and they are often easily influenced by the products they intend to purchase. Customers who are showrooming are more likely to buy products of higher value and price, although looking for a retailer that charges a lower price [80].

However, according to Flavián et al. [75], Webrooming behavior is the predominant form of buying between channels, where consumers feel more confident. The same authors documented that, in the process of buying Webrooming, the combination of online research and offline shopping improves consumers' shopping experience in terms of purchase, choice, satisfaction of the research process, and confidence in choice [80].

As the multichannel retail evolves, the omnichannel retail focuses on the shopping experience across all channels [77] consisting of creating a general retail experience that is consistent across all channels and touchpoints [78]. According to Brynjolfsson et al. [81], the retail paradigm was changed, focusing more on the consumer's shopping experience. Thus, Rigby [82] states that the omnichannel flap emerges from a natural evolution of the multichannel flap.

Now, the omnichannel retail is differentiated mainly by the ability to integrate channels, where the distinction between physical and online retail has been almost extinct [81], making it possible to provide consumers with a unique shopping experience, regardless the sales channel used [78, 81, 82]. According to Skorupa [83], the omnichannel retail consists of the possibility of integrating the various channels, depending on a variable environment, accessibility to a mobile device, and consumer preference. According to the same author, an omnichannel consumer is 21% more profitable than a single-channel consumer [83]. As more and more customers demand an integrated shopping experience across channels, many retailers resort to an omnichannel strategy to remain competitive [84]. However, retailers are only able to reap benefits if they know how to relate to consumers across all channels.

According to Verhoef et al. [81], omnichannel means that the different retail channels are used interdependently by consumers, during the purchase process. It aims to optimize the consumer's experience and performance, through the different channels. It also allows consumers to move freely between the online interface, mobile devices, and the physical store, transforming the consumer's journey into a simple and consistent buying process, providing them with a unique experience, regardless of the channels used [81]. The consumer can thus choose to use any of the available channels during any stage of the purchase process, depending on his needs [18]. In an omnichannel experience, consumers are more loyal and more profitable, behaving differently. Still, they take more advantage of all the benefits that technology provides them, and consequently, are more demanding with retailers [24].

Thus, according to Rigby [82], the omnichannel retail incorporates the advantages of access to information present in online consumption, while providing the physical store experience, and thus, consumers move freely between the different channels [60], such as e-commerce, mobile commerce, and social commerce, in order to make a buying decision [77]. Thus, due to technological advances, physical stores are no longer a touchpoint between the consumer and the brand [12]. However, they started to assume a more complex role, creating added value for the consumer, by satisfying more than one.

30.5 Discussion and Future Research

The literature review made it possible to identify the theoretical bases and to trace the direction of the present investigation, within the scope of the developed points. For retailers to develop omnichannel, strategies to cope with Millennials´ expectations are paramount. Millennial consumers integrate seamlessly the digital into their life, which extends well into the way that they consume and buy. For Millennials, there is no boundary between online and offline; therefore, retailers and brands ought to adapt. It is possible to conclude that the retail paradigm has changed, focusing more on the consumer's shopping experience. Thus, the omnichannel concept has become a fundamental concept in the retail area. New technologies, such as smartphones or

social networks, combined with the improvement of mobile data, present the dream of a unified shopping experience across all channels.

E-commerce is seen as an opportunity for companies to become omnichannel organizations, combining virtual and physical consumption and vice versa, given that consumers are everywhere, at the same time, they move freely between channels. In this way, the omnichannel concept has shown itself more and more as a resource used by the retailer to build consumer loyalty through a complete and integrated shopping experience for the consumer, regardless of the channel chosen. Organizations with a well-structured omnichannel strategy should offer an identical experience in all channels, providing consumers with a similar shopping experience in whatever channel they choose, such as in-store service, mobile app, chat, among other segments. By betting on the omnichannel, then, it is expected more than being present in all channels, but providing an identical consumer experience throughout all touchpoints.

Thus, deepening the omnichannel experience, there is still a gap in the literature regarding the integration of this approach in the food retail, where the consumer relates to the product in different ways, as a whole. The great challenge that organizations face is to consolidate the omnichannel consumer experience, making the experience homogeneous and consistent, regardless of whether the consumer moves from one channel to another. Thus, an omnichannel organization develops strategies that allow the creation of experiences that are positive for the consumer, that exceed expectations, in order to assign added value to the brand.

In sum, retail is an ancestral industry which today faces new consumers whom are native digital. This new consumer lives their life in an intertwined fabric where the digital and physical mixed seamlessly. They grow up this way, now that there are consumers with very relevance disposable income, they expect retail to be like all other aspects of their lives, i.e., neither digital not physical but both: omnichannel. For retailers, this means new challenges and opportunities. They cannot simply ignore it; they must adapt and integrate all channels and touchpoints.

Now, it urges to collect empirical data to complement this conceptual study. An empirical study, both quantitative and qualitative should be carried in order to better understand how the omnichannel is changing retail and to provide those in business with the conceptual tools to better develop their businesses, adding more value to their more demanding consumers. Therefore, further research should focus on gathering data and evidence to support and inform both the literature and those managing businesses and looking for guidance in adapting to this fast-changing world. Furthermore, it is highly recommended to conduct empirical research, both quantitative and qualitative to test these ideas on how the omnichannel can come to exist.

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Chapter 31
Overview of Professional Growth Data Processing in Latvia

Viktorija Stepanova and **Ingars Eriņš**

Abstract The paper provides some insights into the processing of professional growth data in Latvia. A qualitative analysis of the system was carried out using surveys of direct system participants to investigate the research subject. Within the research, a number of factors were considered to justify the need to reorganize data exchange in the existing system and to develop a new model for the circulation of professional growth data.

31.1 Introduction

Currently, the digital economy has become the focus of the global active interest. Particular attention is paid to new technologies in relation to the situation caused by Covid-19 [1]. Cities invest in information and communication technologies (ICT) and train people to improve and facilitate business and their daily processes. Blockchain is considered one of the most advanced technologies that stimulate the development of smart cities and support digitalization.

From 2017, Latvia has started to follow the global development trends in the area of blockchain technology and drew an informative report with an aim to evaluate the prospects for the use of blockchain technology in the public sector, the related legal issues and to identify further actions in promoting its development in Latvia. Pilot projects and planned activities at the state and EU level have been launched since 2018 with an aim to promote interoperable blockchain infrastructure [2]. On December 12, 2017, "Latvian Blockchain Association" has signed an agreement with the Investment and Development Agency of Latvia (IDAL) on the receipt of support within the activity "Promoting International Competitiveness" co-financed by the European Regional Development Fund (ERDF) [3]. All three Baltic States

V. Stepanova (✉) · I. Eriņš
Faculty of Computer Science and Information Technology, Riga Technical University, Riga, Latvia
e-mail: viktorija.stepanova@rtu.lv

I. Eriņš
e-mail: ingars.erins@rtu.lv

have signed a Memorandum of Understanding [4] to support regional capital market development by supporting innovations, including solutions based on blockchain technology. Global trends highlight the interest of society in blockchain technology and the topicality of the research topic. The aim of this paper is to provide an overview of professional growth data processing in Latvia and to consider factors that justify the need to reorganize data exchange in the existing system.

The second chapter of the paper provides an overview of the related work on the blockchain personal data processing. The third chapter gives an insight into the processing of professional growth data in Latvia as well as sets the research questions. Chapters four and five present research results.

31.2   Related Work

Data processing or data management are the research areas in the field of blockchain technology. The processing of personal data of a natural person may be defined as any activity performed with the personal data, including data acquisition, registration, storage and use. At the same time, the concept of data management covers activities related to the effective implementation of data processing.

The processing of person's health data is one of the most complex problems that researchers try to solve with the help of blockchain technology. Patient data are not sufficiently protected in different healthcare systems, patients have no control over their data, and the lack of data management standards slows down the development of blockchain in medicine. A large number of publications are dedicated to the solution of this problem. For example, it was proposed to assess the functionality of blockchain in clinical trials [5], software architecture [6] for patient data control and a mobile application for health data exchange [7] that protects patient privacy were developed. It can be noted that a conceptual forecasting model [8] and the prototype of the system were developed [9], which allow predicting risk factors in human health-related issues. In some papers, the authors suggested solutions to allow third parties to access patient data for research purposes [10]; they analyzed the compliance of blockchain-based systems with demands of patients, service providers and third parties [11]. In general, a number of models, scenarios and algorithms were offered to the public to solve data processing issues in the healthcare sector on the premise that blockchain technology can help protect patient data privacy, exclude intermediary control, reduce the risk of abuse and increase the quality of health care provided to citizens.

Improvement of digital identity services is another research subject that is investigated in the paper; it has become a major security-related problem in the world that must be solved. It is still not possible to use a single profile account, such as Gmail or Facebook account, when Internet users register on multiple portals. Users must remember many passwords at the same time or use the same password for all platforms, which is not recommended for data safety reasons. Blockchain technology allows a single identity system to be maintained for a number of Internet

services, such as DecentID [12], uPortID [13], Sovrin [14] or e-ID issued to Estonian e-residents [15], which is an international virtual passport that allows identifying the user. As an identification and authentication tool, blockchain frees the users from having to create additional accounts for separate e-services and allows service providers to reduce costs, as there is no need to maintain identity and authentication services.

Papers [16, 17, 18] view blockchain technology as a data tracking tool, highlighting the ability of the technology to validate and verify records on the network. Capabilities of the technology significantly increase the degree of data reliability, transparency and security, particularly in relation to transactions where it is important to prevent fraud and counterfeiting. A number of studies [19] highlight one major problem that can be solved by blockchain technology, and that is data processing in education. In 2014, for the first time, blockchain technology was used for student data processing at the University of Nicosia [20]. Further, this idea was developed by the Massachusetts Institute of Technology (MIT). The university developed a student wallet that records student education data for safe sharing, which offers opportunity for the potential employers to check education of the graduates. In addition to functionality of the innovation, Holberton School also proposed to register behavioral and class activity information in the blockchain.

Echolink [21] is a Web solution that allows recording and verifying credentials and work experience in real time. Moreover, this platform generates cryptocurrency—users who import data into the platform are paid money for using the service, but those companies that are interested in the data must pay for receiving reliable information.

Another two education and work experience platforms that support blockchain development are Teach Me Please and Skyllz projects that are currently maintained by Disciplina, bringing together educational institutions and organizations [22]. Teach Me Please offers everyone to find online tutors for acquisition of new knowledge, while Skyllz offers entrepreneurs and HR specialists to find human resources with certain skills.

In order to organize professional growth data processing in Latvia and to eliminate the shortcomings, some processes can be modified, and on their basis, a new model should be developed, which will include personal data that is currently maintained in several registers and in different formats. The aim of this publication is to identify the factors justifying the need to reorganize data exchange in the existing system in the procedures of professional growth data processing in Latvia.

31.3   Insight into the Processing of Professional Growth Data in Latvia

Terms for processing of professional growth data in Latvia are set by the National and General Data Protection Regulation [23]. It is the duty of employers and universities to ensure the processing of personal data and to follow the principles of data protection.

Circulation of personal data in higher education institutions: Higher education institution is entitled to issue nationally recognized diplomas only if the educational institution is accredited. The Ministry of Education and Science issues the relevant accreditation document [24]. In order to enroll in a higher education institution, data subject (a natural person) must submit personal identification document and information regarding the acquired education to the data controller (higher education institution). Documents attesting the course of a person's work or service and education have archival value, and according to the regulations regarding personal documents of archival value [25], the period for keeping these personal files is 75 yr, allowing the data owner to periodically check the information in their personal file. Higher education institutions create a personal file for each student and after the defense of diploma—an alumnus file. Higher education institutions must also maintain diploma ledgers in which all diplomas awarded by the higher education institution are to be registered [26]. In addition, in 2017, the Parliament of Latvia adopted amendments to the Law on Higher Education Institutions stating that the data on persons studying at the study programs and persons who have acquired a doctoral degree shall be registered in the Register of Students and Graduates, which is a part of the State Education Information System (VIIS) [27]. On June 25, 2019, the Cabinet Regulation on the use of VIIS was adopted.

Circulation of personal data in enterprises: To obtain the status of a legal entity, each start-up company must be registered in the Register of Enterprises of the Republic of Latvia [28]. Usually, employers require from the data subject the information about education and work experience. This information is submitted in a structured form as CV and/or application form. The employer also has the right to request references from the previous workplaces and the statement from the State Social Insurance Agency (VSAA) on the social security contributions of a natural person and insurance coverage periods. In order to ensure the execution of the regulations specified by the state, employers are obliged to electronically register each employee in the "Employee and Employer Register" of the State Revenue Service before the person commences their work. There is no single professional growth database at the national level that reflects personal data in terms of education and work experience datasets.

Based on the basic principles of personal data protection and safety, two questionnaires (for employers and universities) were drawn up within the paper to analyze the current situation in the area of professional growth data processing. Human resource departments from 645 the most successful and profitable companies in Latvia with the number of employees 50 and more were involved in the research. The total

number of employer-respondents reached 80. There are a number of public and private higher education institutions participated in Latvia: Five higher education have university status, six institutions granting doctoral degrees, nine state institutions granting degrees below doctoral level, 13 private institutions with accredited programmes. Feedback was received from 11 institutions. The main research questions that were set for this paper are as follows:

RQ1: What data are collected from a natural person when selecting potential employees?

RQ2: What data in the CV are considered the most important by employers?

RQ3: How do recruitment specialists check the applicant data?

RQ4: How much do employers trust the data supplied by job applicants?

RQ5: What proportion of 100 CVs contain false information?

RQ6: Do universities detect cases of diploma forgery by authenticating diplomas?

RQ7: What type of storage is provided for job applicant/employee/student/alumni data?

RQ8: Do human resources specialists and university representatives know the blockchain technology?

RQ9: Are human resources specialists and university representatives ready to use blockchain-based software for processing of personal data on education and work experience?

31.4 Employer Survey Results

RQ1: According to the survey results, when selecting potential employees, the majority of surveyed respondents request a CV (96.3%) and an application letter (78.8%). Some use a unified application form (12.5%) for obtaining information. In addition, 11.3% of respondents request references from the previous employers.

RQ2: An importance index was calculated for each data type to identify which data in the CV employers ascribe the most importance to. The principle for measuring the customer loyalty index was used as the basis for calculating the data importance index. This principle can be similarly used for the calculation of the importance index for data in CV. Depending on the answer to the question, respondent answers were divided into three groups:

Assessment I—important information: % of respondent answers "very important" + "important".

Assessment N—neutral information: % of respondent answers "partly important" (not taken into account in the calculation).

Assessment U—unimportant information: % of respondent answers "barely important" and "totally irrelevant".

$$I_{ind} = I - U \tag{31.1}$$

Table 31.1 Assessment of the CV data

How do you assess the information included in the CV?

	I	N	U	I_{ind}
Basic data (name, surname, year of birth, contact details)	28 + 36	20	11 + 5	48
Education acquired (year, institution, professional qualification, degree)	62 + 30	8	0 + 0	92
Work experience (place of work, position, duties)	66 + 30	4	0 + 0	96
Additional education, language skills	12 + 62	23	3 + 0	61
Other skills	6 + 33	48	13 + 0	26
Interests	1 + 5	46	33 + 15	12

The range of this indicator may vary from -100 to + 100. The closer the value of I_{ind} to + 100, the more importance employers ascribe to the data.

The assessment of the information included in the CV was summarized in Table 31.1.

The results show that the majority of employers ascribe more importance to the data on work experience ($I_{ind} = 96$) and the acquired education ($I_{ind} = 92$). Information about additional education and language skills ($I_{ind} = 61$) as well as basic data ($I_{ind} = 48$) are considered important as well. While most CVs contain information about the applicant's other skills and interests, nearly every other respondent thinks it is a "partially important" information. The importance index for other skills is 26, but for interests, it is 12, indicating that these data are not taken into account in the decision-making process at all.

RQ3: In order to verify the period of employment of a potential employee and the education data prior to the establishment of employment relationship, the employer has the right to request the applicant's education documents and references from the previous employers. In addition, if a candidate has given their permission (preferably in the written form), it is possible to obtain information from the applicant's previous employers and educational institutions. The results of the research also show that the majority of surveyed (75%) do not verify data on work experience, as it is considered that the applicant is responsible for submitting true information. The majority of those who do want to verify the validity of the data require the applicant to submit references from the previous employers (32.5%) and conduct interviews with the referees (26.5%), some require educational institutions to verify the authenticity of the diploma (1.3%) and/or request statement from the VSAA on the social security contributions and periods of insurance coverage (1.3%). The data verification process typically lasts from 1 h (43.5%) to 3 business days (47.8%), and in some cases a week or more.

RQ4: While most respondents do not check the candidate's data on education and work experience, the survey also included the question concerning the data sources they trust the most.

Similarly as with determination of data importance index, NPS tool was used to determine data confidence index. Depending on the answer to the question, respondent answers were divided into three groups:

Assessment H—high degree of confidence: % of respondent answers "fully trust" + "rather trust".

Assessment M—moderate degree of confidence: % of respondent answers "partially trust", not taken into account in the calculation.

Assessment L—low degree of confidence: % of respondent answers "rather do not trust" un "fully do not trust"

$$C_{\text{ind}} = H - L \tag{31.2}$$

The range of this indicator may vary from -100 to + 100. The closer the value of C_{ind} to + 100, the higher the degree of trust to the data source is.

The results show (see Table 31.2) that of the eight data sources, recruitment specialists trust the most the originals of diplomas and certificates ($C_{\text{ind}} = 98$), VSSA statements ($C_{\text{ind}} = 95$) and university certificates of authenticity ($U_{\text{ind}} = 95$). The degree of trust toward referee interviews is lower ($C_{\text{ind}} = 43$), but the degree of trust toward references from the previous employer submitted by the applicant is the lowest ($C_{\text{ind}} = 21$).

RQ5: The survey shows that the majority (74%) of respondents find cases where the applicant's CV contains false or exaggerated information about foreign language skills. Nearly half of those surveyed (47.45%) who identified such cases say that from 100 received CVs, from 10 to 30 contain false information about foreign language skills. At the same time, every fourth recruitment specialist says the figure is higher and 30–80 applicants exaggerate information about their foreign language skills.

Respondents rarely find false information about education and work experience. Only 31.6% have confirmed that they found that a potential employee lied about the acquired education, and this is mainly 1–10 case per 100 CV (68% revealing data

Table 31.2 Assessment of data source confidence

How do you assess the reliability of the data from the following data sources?

	H	M	L	C_{ind}
Original of the diploma	88 + 11	0	1 + 0	98
Copy of the diploma	31 + 45	12	8 + 4	64
Original of the certificate	88 + 13	0	1 + 0	98
Copy of the certificate	28 + 49	12	10 + 1	66
VSAA statement on the social security contributions of a natural person and insurance coverage periods	85 + 11	3	1 + 0	95
Reference from the previous employer submitted by the applicant	7 + 28	51	14 + 0	21
Interviews with the referee	13 + 36	45	6 + 0	43
University certificates of authenticity	78 + 18	3	1 + 0	95

manipulation). However, it should be stressed that 32% of respondents point to the fact that this rate is 10–60 CVs out of 100.

Concerning the length of employment, human resource specialists (57.5%) confirm that they often identify false or exaggerated information on the applicant's work experience. For example, potential employees in the CV indicate a higher position in the previous jobs or extend their employment period. More than a half (56.5%) say that only 1–10 CVs per 100 units exaggerate data on the length of employment, only a fifth (21.7%) says the number of CVs per 100 units is between 10 and 20, while others note that the figure can reach between 20 and 80 CVs per 100 units.

RQ7: Given that employers themselves are data controllers, they were asked additional questions about data safety in their organization: what kind of personal data storage is maintained at the organization? who can access the data? how securely personal data are protected (on the scale 1–5)?

In order to start employment relationship with a company, a natural person should submit a personal identification document, information on education and previous work experience to the employer. In order to ensure execution of the regulations specified by the state, employers are obliged to electronically register each employee in the "Employee and Employer Register" of the State Revenue Service before the person begins their work [81]. The data obtained show that at 42.5% of companies applicant files are stored separately in a locked cabinet/rack, 45% store data in the electronic form, and 12.5% of data managers say that at their organization, information about job applicants and employees is stored in electronically anonymized form so that this information does not allow a certain person to be identified. In 89% cases, only recruitment specialists, 6.3%—employer and 5%—administrative staff can access the data. Regarding the data safety scale, 48.8% of respondents chose assessment "4". 38% of respondents are convinced that at their company the data are completely protected and assessed it with grade "5". However, there is also a small number of respondents who consider that personal data protection can be assessed with "3" or "2" on a five-grade scale.

RQ8 and RQ9: In view of the fact that the aim of the paper is to develop a blockchain-based model that will be used to promote development of this technology in Latvia and to transform and improve physical data processing, respondents were asked about their awareness and understanding of the blockchain. The survey results show that 58.8% of employers do not know anything about blockchain technology, 37.5% have heard of it, and only three people out of 80 said they were aware of the technology and its application possibilities, but no one used it in their work. After reading a brief description of the blockchain technology and answering the question whether they would use a blockchain tool to check applicant data, the majority (53.8%) responded positively. A similar number of positive answers (48.8%) were obtained when respondents asked whether they would use the tool described to record information about employee work experience at their company.

31.5 Higher Education Institution Survey Results

RQ6: Although the majority of employers surveyed do not check the information on education provided by the applicant, universities often need to issue a certificate of authenticity of the diploma. According to the survey results, a half (54.5%) of the surveyed universities receive up to ten enquiries per year, for example, the Latvian Maritime Academy, Daugavpils Medical College of Daugavpils University or the Latvian Academy of Sport Education. Two other universities (18.2%) receive from 10 to 20 enquiries per year. Riga Technical University processes more than 100 enquiries per year (9.1%), while others (18.2%) do not receive any enquiries. Moreover, the majority of respondents (54.5%) only provide information on the authenticity of the diploma, excluding personal data, while others (36.4%) only provide information to employers if the graduate has given a written permission. At the same time, Rezekne Academy of Technologies does not issue statements to employers at all (9.1%), explaining that a graduate can receive all their personal information and then present it to another person. The survey results show that diploma authenticity generally does not reveal cases of diploma forgery. In an interview with a representative of RTU Study Department, it was stated that there were two cases of counterfeit in the last 6 yr. The University of Latvia did not participate in this survey, but in correspondence with a personal data protection specialist, it was noted that there are 3–4 cases of falsification of diplomas per year, from which it can be concluded that the University of Latvia, similar to Riga Technical University, handles not less than 100 diploma authenticity enquiries per year.

RQ7: In response to data safety questions, 54.5% of universities state that student/alumni files are stored separately in a locked cabinet/rack, 27.3% of respondents have hybrid files (both paper and electronic form), while one-fifth (18.2%) store data only in the electronic form.

36.4% of respondents say that data stored at universities are fully protected and gave a score "5" out of 5. Equal number of respondents (36.4%) assessed data safety with "4", and the rest (27.3%) assessed it with grade "3". Access to student/alumni data is generally restricted to particular groups of employees: archive staff, faculty filing clerks, employees of the Study Department, employees of Human Resources and Legal Department.

RQ8 and RQ9: Similarly as in case with employers, higher education institutions were asked the question about the awareness and understanding of the blockchain. The survey results show that 40% of respondents know nothing about blockchain technology, 30% have heard of it, and 30% know the technology and the possibilities of its use, but none of them uses it. In response to the question whether they would use the blockchain tool to verify current information about applicants, students or graduates, 40% responded positively. 30% or three universities are ready to record information about students and alumni.

31.6   Conclusions

According to the employer survey results, it was concluded that:

- Data on education and work experience are the most important information about the potential employee affecting the decision of recruitment specialist;
- Employers partially trust the information provided by the applicant;
- The applicant's data verification process typically lasts from 1 h to 3 business days;
- The majority of respondents find cases where the applicant's CV contains false or exaggerated information;
- Employers often find false or exaggerated information about the applicant's work experience;
- A large proportion of companies still store applicant files and/or paper format copies separately in a locked cabinet/rack;
- The majority of respondents do not know anything about blockchain technology, but are ready to use blockchain tool to check applicant data and record information about employee's work experience at their company.
- According to the higher education institution survey results, it was concluded that:
- The largest universities in Latvia receive more than 100 enquiries about authenticity of diplomas from employers per year;
- During diploma authenticity check, universities sometimes detect cases of diploma forgery;
- The majority of the surveyed universities state that student/alumni files and/or paper format copies are stored separately in a locked cabinet/rack;
- The majority of respondents do not know anything about blockchain technology, but are ready to use blockchain tool to check and record current information about students, alumni and applicants.

This study justifies the need to reorganize data exchange in the existing system by defining the following factors:

- Degree of confidence in the data processing system;
- Period of data verification and complexity of the process;
- Professional growth data are maintained in several registers, which requires reduplication of separate actions and makes data management more difficult;
- Readiness of the potential users to reorganize the process;
- Opportunity to falsify data in the existing professional growth data processing system;
- Data processing in the paper format, which limits process transparency and data availability;
- The necessity to increase personal data safety by reducing the impact of existing risk factors on data subjects and reputation of organizations;
- The need to raise public awareness and understanding of the technological capabilities of blockchain.

Introduction of blockchain technology in data processing could help solve professional growth data process organization issues described above. The findings show that respondents who participated in the survey and who responded that they would like to use a blockchain-based tool for data processing could be the potential testers and users of the new model.

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Chapter 32
Will Marketing Automation Encourage Repurchase Intention Through Enhancing Brand Experience? An Empirical Study of Omni-Channel Retailing in China

Jing Lyu

Abstract Marketers adopt marketing automation tools to reach more potential lead customers through behavioral tracking systems and sending personalized marketing information. The advantages have been acknowledged by practitioners but lack depth understanding from customers' viewpoints—how do customers value personalized marketing content. Thus, this research aims to fill the gap through distributing online survey to "digital natives" who have online purchase experience and stay active on social media in mainland China. Three hundred and eighty-two valid responses were generated and examined through performing structural equation modeling (SEM) via AMOS 26. The findings demonstrate that emerging components of marketing automation include enhanced consumer engagement, personalization and integrated channel performance. These MA elements contribute to positive brand experience, yet privacy concern does not jeopardize customers' brand experience. And positive brand experience derived from MA adoption would increase repurchase intention of the same brand.

32.1   Introduction

Marketing automation has become a competitive tool that companies adopt in order to nurture potential lead customers and provide best customer services through constant personalization. Through targeting right people at a right time, marketing automation (hereafter MA) also facilitates an efficient performance of approaching lead customers and optimizing brand experience [1]. Moreover, practitioners employ automated marketing tactics to speed the entire marketing performance in terms of identifying individual customers with appropriate marketing messages or content. By doing so, companies have better controls and prediction in reaching lead customers

J. Lyu (✉)
Department of Digital and Data Driven Marketing, University of Southampton, Southampton
SO17 1BJ, UK
e-mail: Jl1r15@soton.ac.uk

and optimizing marketing strategies to potential audience. Due to the technological advances, a rich number of marketing automation tools have evoked such as machine learning [2], artificial intelligence enabled Chatbot [3] and AI-assisted recommendation systems [4].

The terminology of MA can be dated back to Little [5] explaining the marketing decisions influenced by the Internet, which has been extended for two decades. However, only 40% of brands have successfully implemented some forms of MA platforms [1], implying that more than half of organizations may struggle to acknowledge the competitive advances of such automation. To date, global companies have spent $11.4 billion to diversify MA tools by 2017 [6] such as email marketing, pop-ups, web push and other machine-enabled tools to track the distinctive online clicking behaviors. Moreover, these MA tools can outline specific web pages of potential customers' visits, their interested topics, demographic characteristics, etc. [7]. For example, WeChat, a worldwide mobile social application embracing outstanding types of utilitarian and hedonic functions, has been developed to accurately segment customers and deliver appropriate marketing information in China [8]. Furthermore, marketing practitioners enjoy the essential convenience of interacting and promoting their brands to prospected customers, through continuously enhancing WeChat's communication performance. As a result, customers may connect more with interactive brands and show greater inclination such as increased repurchase intention [9].

Hence, AMA refined MA as a type of technology that helps business to accomplish: (1) tracking individual or group's engagement with a specific brand, (2) utilizing structured/unstructured customer data to personalize shopping experiences and (3) interpreting these data into particular revenue chances for a company [1]. While reviewing relevant literature about the MA demonstration and application, there seems subtle literature delineating the corresponding influence that MA brings to branding such as brand experience and repurchase intention from customers' viewpoints. Previous scholars mainly refined the terminology of MA [10, 11] and addressed the MA performance with respect to technology adoption [12], content personalization and lead customers generation [13]. Given the initial purposes of MA encompassing branding strategy and customer experience, this research sets a pioneering positioning to investigate whether and how MA performance affects customer's brand experience and subsequently impacts repurchase intention under the umbrella of omni-channel retailing in China. The rationale of choosing Chinese market has been articulated in depth but not presented here due to word limits.

32.2 Theoretical Background and Hypotheses Development

32.2.1 Brand Experience

Apart from MA adoption by marketing practitioners, another significant concept builds on brand experience since MA alters optimized customer relationships with a company or a brand. Conceptually, Khan and Rahman [14] demonstrated the brand experience as "*consumers' purchase and consumption experiences with brand and the organization, as well as to the brand influence on non-consumers*". It outlines a close connection between customer experience and perceived brand cues because customers aware of brands and recall brand information automatically according to the past purchasing experiences [15]. By recognizing a brand logo, color, brand tunes and slogans, customers can interact with brands or retailers more effectively, and it helps establish brand loyalty owing to continuous communication [16].

In addition, customers may expect psychological enjoyment derived from engaging with brands and companies, and some loyal customers hold affiliation toward brands and express themselves when displaying a designer's handbag logo [17]. Thus, brand experience significantly contributes to forming customer loyalty program, which requires consistent communication and interactions with customers over a period from being aware of a brand to loyal brand followers [18]. Hence, retailers competitively deliver best brand elements to customers amid retaining more clients in a long-term run. For instance, apart from email marketing, offline retailers inspire customers to follow their social media pages to optimize communication and nurture pleasant brand experience through integrated channels via websites, social and mobile mediums simultaneously [19].

32.2.2 Hypotheses Development

Enhanced Consumer Engagement and Marketing Automation
The fundamental process of MA requests certain level of consumer engagement when a brand attempts to approach lead customers [20]. Contemporary customers actively engage with brands or companies whereby automation systems provide distinctive platforms for timely engagement. Besides, customers initially interact with companies for decision-making inquiries, and digital technologies provide machine learning opportunities for new adopters [21]. Furthermore, MA allows retailers to track customers' shopping touchpoints by specifying individual's click rates, browsing frequency and online interactions with others so that appropriate marketing information can be delivered to right leads. As for customers, they find means to express themselves by engaging with retailers and raising social appeal via digital marketing tools accordingly. Thus, it posits that:

H1a: Enhanced consumer engagement contributes to improved MA adoption.

Personalization and Marketing Automation

By delivering personalized and tailored marketing content to lead customers, MA facilitates a more effective communication performance in improving brand experience [22]. Theoretically, personalization is defined as "*system-driven tailoring of content (e.g., product, services) that accommodates individuals' characteristics and needs*" [23]. Extant research illustrates vast understanding of personalization under different contexts, for instance, Strycharz et al. [24] outlined that personalization can be explained as suitable segmentation and targeting strategy to potential audience on the foundation of analyzing prospected customer datasets. This research especially discusses the personalization of marketing automation and related brand experience. Recent study has highlighted that in the digital ages, automaton of marketing enables retailers to concentrate on customer experience by ensuring that target audience can access to social media posts, advertisements and contents that raise emotional appeal to clients [25]. This is because customers want to be valued uniquely and personalization can be a good approach in achieving the goal during the automation process. Thus, it posits that:

H1b: Personalized marketing information contributes to improved MA adoption.

Integrated Channel Performance and Marketing Automation

Omni-channel retailers have extended their businesses through several integrated channels simultaneously to reach as many customers as possible [26] by advertising in offline stores, positing via online and social media channels to penetrate customers' awareness. Furthermore, marketing and sales departments employ automation tools to alter digital marketing campaigns while educating in-store customers about MA adoption. For instance, retailers integrate mobile messaging with emails and social campaigns through SMS, push notifications and group messages after customers visit a store, which often takes place via WeChat platform. Another example lies in that regular push notifications and birthday-voucher marketing are received in customers' inbox after the first purchase and registration with a focal brand in-store. Besides, mobile app-based tracking systems identify customers' browsing history and automatically remind them with respect to new arrivals or marketing events. Unsurprisingly, integrated channels aim at setting up a comprehensive database of potential customers, using stimuli to segment these groups and developing satisfying relationships with brands [27]. Thus, it posits that:

H1c: Integrated channel performance contributes to improved MA adoption.

Given the above three hypotheses delineating significant MA elements, the researcher additionally proposes:

H1: A conclusive MA performance contributes to increased brand experience.

Privacy and Brand Experience

Nevertheless, the downside of personalization voices perceived privacy that customers may encounter while receiving tailored marketing information [28]. This is because privacy could violate consumers' willingness toward interactions with companies or brands. In addition, customers constantly balance the trade-off between receiving personalized services and worrying their personal information leaked

[29], they consider privacy as priority issue when involved with online transactions and registrations. In particular, e-retailers confront the significant challenge when promoting personalization since customers may be reluctant to share personal information, which undermines the performance of reaching more customers [30]. Hence, customers embracing higher privacy concerns show decreased collaboration and fear toward brands if they are bothered with too much personalized marketing content. Thus, it posits that:

H2: Privacy concern resulted from MA negatively impacts brand experience.

Brand Experience and Repurchase Intention
Positive brand experience is accumulative and expected to build up good relationship with customers [31], especially MA connects target customers through interactive approaches emotionally and behaviorally. It contributes to a greater number of retained customers who hold positive and loyal attitudes toward a brand, understood as repeat purchase. Repurchase intention is defined as the "individual's judgement about buying again a designated service from the same company" [32]. In fact, marketers consider it more expensive to obtain a new customer than retaining an existing client. Moreover, repeat customers spend 67% more than new consumers in online shopping context, and they are nurtured into brand loyalty program in the end [33]. Thus, it posits that:

H3: Positive brand experience achieved from MA adoption leads to repurchase intention of the same brand.

32.3 Research Methodology

A predetermined survey was distributed online after accomplishing pilot tests with ten colleagues from the marketing department of a local university. Data collection was completed by recruiting a third-party survey organization to generate larger response rate in June 2020. Purposive sampling was chosen as the researcher targeted young Chinese consumers (in mainland) who are digital natives including generation Y and Z. These respondents should have rich experiences in terms of online shopping and social media communication. The researcher managed to collect 382 valid responses out of 410 handouts. Moreover, more male respondents (of 57.9%) collaborated with the research than females (42.1%). Young generations aged between 18 and 40 year old took up nearly 90% of the total responses, which realized the purpose of approaching young respondents and collecting decent insights on MA adoption. In addition, there were 21.5% of student respondents and 67.0% reported being employed. Accordingly, it reported that the majority of respondents have achieved higher education including bachelor's (75.4%), master's (12.5%) and doctoral degrees (4.5%) while only 7.6% of respondents qualified with high school or lower education. These demographic details can be employed as control variables in analyzing the structural model at a later stage. At last, about 59.9% of respondents acknowledged that they would be willing to stay with brands' subscriptions and

receive personalized marketing information, but 13.7% of respondents chose unsubscribed from emailing lists and those 26.4% did not mind withdrawing or retaining with subscriptions.

The questionnaire mainly adopted five-point Likert scale questions (1 = strongly disagree to 5 = strongly agree) to reveal an individual's opinions about MA adoption. The measurement scales were borrowed and further revised from existing scales in related marketing literature. Moreover, four items of enhanced consumer engagement were employed from Jayachandran et al. [34]; three items delineating personalization were adopted from Komiak and Benbasat [35]; five items representing integrated channel performance were amended from Claro et al. [36]; three items demonstrating privacy were derived from Sun et al. [30]; thirteen items indicating four forms of brand experience were revised according to Kumar et al. [37] consisting of sensory, affective, behavioral and intellectual brand experience; and three items measuring repurchase intention were borrowed from Han et al. [38].

32.4 Findings and Discussions

32.4.1 Findings

First, reliability test of measurement scales was conducted by assessing Cronbach's Alpha value (α) (see Table 32.1) if exceeded the thumb value of 0.7. All measurements of variables achieved robust internal consistency with a minimum value equals 0.708.

To avoid common method bias, according to Harman's one factor [39], it reported that there was 28.81% of variances explained by extracting only one factor, meeting the thumb value within 50% of the variance among all variables. Before examining the structural model, a two-order reflective measurement model was explored through conducting confirmatory factor analysis (CFA) via AMOS 26. More specifically, the first-order latent variables (i.e., consumer engagement, personalization, integrated channel performance) reflected the second-order construct "MA", and total brand experience (TBE) was reflected via four forms of brand experience. Given the sample size of 382 responses, the model fitness indices were $\chi^2 = 725.778$, degree of freedom (df) = 391, CMIN/DF = 1.856 (<3), $p < 0.001$, GFI = 0.923 (>0.9), AGFI = 0.913, TLI = 0.905 (>0.9), CFI = 0.915 (>0.9), RMSEA = 0.047 (<0.07). Hence, all of GOF indices have met the acceptable requirements, indicating a good measurement model was achieved. Table 32.1 also displays the factor loadings of indicators and latent variables derived from CFA output. Each first-order items and second-order indicators significantly relate to the key constructs ($p < 0.001$).

When performing CFA, constructs' convergent and discriminant validity tests are essential. In terms of convergent validity, all factor loadings should be bigger than 0.5, and all of indicators achieved significant differences ($p < 0.001$) ranging from 0.503 to 0.965 (see Table 32.1). Moreover, the average variance extracted (AVE) value is suggested to meet thumb standard of 0.5. According to Table 32.2, the

Table 32.1 CFA factor loadings and reliability test results ($N = 382$)

Latent variables/indicators/items	CFA Factor loadings	Mean (standard deviation)	Cronbach's Alpha (α)
Marketing Automation Adoption (second-order) 3.644 (0.821)			
Consumer engagement behavior (CEB)	0.884***	3.678 (0.786)	**0.708**
Ceb1	0.685***		
Ceb2	0.522***		
Ceb3	0.503***		
Ceb4	0.647***		
Personalization (PSL)	0.750***	3.450 (0.902)	**0.748**
Psl1	0.779***		
Psl2	0.736***		
Psl3	0.620***		
Integrated channel performance (ICP)	0.890***	3.805 (0.775)	**0.710**
Icp1	0.661***		
Icp3	0.573***		
Icp4	0.647***		
Icp5	0.538***		
Privacy (PVC, reversely coded) 2.044 (0.912)			
Rpvc1	0.775***		**0.822**
Rpvc2	0.776***		
Rpvc3	0.785***		
Total brand experience (TBE, second-order) 3.510 (0.913)			
Sensory brand experience (SBE)	0.909***	3.620 (0.901)	**0.866**
Sbe1	0.524***		
Sbe2	0.536***		
Sbe3	0.656***		
Affective brand experience (ABE)	0.830***	3.312 (0.919)	
Abe1	0.702***		
Abe2	0.759***		
Abe3	0.735***		
Abe4	0.680***		

(continued)

Table 32.1 (continued)

Latent variables/indicators/items	CFA Factor loadings	Mean (standard deviation)	Cronbach's Alpha (α)
Behavioral brand experience (BBE)	0.965***	3.620 (0.901)	
Bbe1	0.594***		
Bbe2	0.584***		
Bbe3	0.653***		
Intellectual brand experience (IBE))	0.952***	3.600 (0.921	
Ibe1	0.596***		
Ibe1	0.596***		
Ibe2	0.579***		
Ibe3	0.638***		
Repurchase intention (RPI) 3.480 (0.885)			
Rpi1	0.679***		**0.762**
Rpi2	0.748***		
Rpi3	0.731***		

Note factor loadings are standardized regression weights, and *** indicates *P* value less than 0.001

Table 32.2 Correlation matrix for latent variables and validity tests ($N = 382$)

Construct	CR	AVE	RPVC	RPI	MA	TBE
Privacy (RPVC)	0.822	0.606	**0.779**			
Repurchase intention (RPI)	0.763	0.608	0.068ns	**0.780**		
Marketing automation (MA)	0.880	0.830	0.079ns	0.709***	**0.911**	
Total brand experience (TBE)	0.963	0.867	0.162*	0.765***	0.904***	**0.931**

Note*means $p < 0.05$, ***means $p < 0.001$, ns means non-significance detected

AVE value of each latent construct achieved the threshold with a minimum index of 0.606, and composite reliability (CR) exceeded 0.7 falling between 0.763 and 0.963. Hence, convergent validity was confirmed. In addition, discriminant validity is detected if squared root of AVE (of a construct) is bigger than the correlations between the constructs. Referring to bold-font figures in Table 32.2, the values are bigger than correlations within each column, and discriminant validity thus meets satisfying results.

When it came to the structural model, in the similar vein, the model fitness indices were $\chi^2 = 781.637$, degree of freedom (df) $= 473$, CMIN/DF $= 1.653$ (<3), $p < 0.001$, GFI $= 0.923$ (>0.9), AGFI $= 0.903$, TLI $= 0.915$ (>0.9), CFI $= 0.927$ (>0.9), RMSEA $= 0.041$ (<0.07). These ratios presented a valid and satisfying structural model encompassing the control variables such as respondents' age, education level

Table 32.3 Standardized regression weights between constructs ($N = 382$)

Construct	Path	Construct/indicator	Regression	Hypotheses decision
Marketing automation	→	Consumer engagement behavior (H1a)	0.882***	Accept
	→	Personalization (H1b)	0.734***	Accept
	→	Integrated channel performance (H1c)	0.882***	Accept
Marketing automation	→	Total brand experience (H1)	0.914***	Accept
Privacy		Total brand experience (H2)	0.101*	Reject
Total brand experience	→	Repurchase intention (H3)	0.753***	Accept

Note *means $p < 0.05$, ***means $p < 0.001$

and acknowledgement of MA adoption, and it then invited correlational relationship tests between constructs (see Table 32.3).

According to the output Table 32.3, first, each element of marketing automation positively related to the second-order construct, indicating that enhanced consumer engagement, content personalization and integrated channel performance significantly encourage customers' adoption of MA tools ($\beta = 0.882, 0.734, 0.882$, respectively). Thus, H1a, H1b and H1c are accepted. Second, a conclusive MA performance led to positive brand experience when a customer encountered automated marketing information ($\beta = 0.914, p < 0.001$). Hence, hypothesis 1 is accepted. Third, individual's privacy disclosure concern did not jeopardize customer's brand experience as proposed since a positive relationship was detected ($\beta = 0.101, p < 0.05$). This finding hints that more personal information shared through MA process would stimulate one's brand experience on the contrast, and thus, hypothesis 2 is rejected. Fourth, the results support that positive brand experience resulted from MA adoption would increase customer's repurchase intention of buying the same brand ($\beta = 0.753, p < 0.001$) as proposed, and thus, hypothesis 3 is accepted.

32.4.2 Discussions

The empirical findings have provided statistical evidence in examining the research hypotheses, simultaneously delineating a fact that customers nowadays do receive and appreciate different forms of automated marketing information from brands. Especially for Chinese customers, the "Internet thing" and such technology-assisted marketing tools play an essential role in emerging market contexts [40]. Moreover, MA targets the right audience through delivering personalized content across different channels to generate more leads, and those who become brand lovers might

show inclination of repurchasing the same brand consequently. Previous research largely evaluated the benefit for companies and marketers in terms of employing the advanced MA tools due to sales-driven purposes but lacked the insights from customers' sides. Therefore, this research fills the gap by revealing the popularity of MA adoption rather than feeling bored with subscribed newsletters.

First, build on the MA definition by AMA, enhanced consumer engagement has been recognized by customers in China. In line with previous study [21], advanced digital tools offer more opportunities to bridge the communication between buyers and sellers than traditional practices of interactions. Besides, nearly 60% of respondents would like to stay subscribed with brands embracing good MA performance as they acquire product and promotion-related updates. Customers are also valued uniquely due to personalization; they could screen key marketing information with minimum effort [25] during MA process. In addition, integrated channel performance increases MA exposure and efficiency to prospected customers [26] which contributes to positive brand experience.

Second, privacy concern has been addressed due to rising popularity of e-commerce and digital platforms [41]. While in China, majority customers complete transactions via mobile social apps such as WeChat and Alipay, and they frequently receive marketing newsletters from brands via these platforms. There exists potential worry of losing personal and confidential information, and privacy leaked when involving with online transactions [42]. Nevertheless, on the contrast of existing research demonstrating privacy's negative impact, the findings of this research imply that privacy positively relates to brand experience. It might infer that Chinese customers nowadays do not treat privacy concern as a violation but enjoy receiving personalized updates from commercial companies to benefit from MA process. They agree to share personal information with retailers and expect incentives triggered from adopting MA practices.

Third, the results ultimately indicated that positive brand experience motivates higher repurchase intention of the same brand, given the satisfaction and acknowledgement of MA performance. Furthermore, MA permits retailers to spot lead customers, retain and nurture them to loyal clients of a focal brand through personalized communication constantly. Such that more retained customers show willingness of repeat purchase.

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Chapter 33
Oporto and Northern Portugal Tourism and the Relationship with Port Wine the 4 C's Tourism Destination Competitiveness Matrix

Diamantino Ribeiro [ID]**, Luiz Pinto Machado** [ID]**, and Pedro Henriques** [ID]

Abstract   With the growth of the tourism sector and its importance for a large part of the world economies, the pressure on destinations to remain competitive in the face of, above all, their direct competitors, is also increasing. Oporto and Northern Portugal have established themselves in recent years as a tourist destination of choice, as is demonstrated by the sector's results and the international prizes awarded to the region. With the growth of national tourism, this region has experienced splendid years. Therefore, the interest in investigating the possible relationship between the growth of the region as a tourist destination and the prestige of the world of Port wine arises. To study that relationship, one of the key factors is an analysis of the competitiveness of the destination. The complexity of existing theoretical models led to the creation of the 4 C's tourism destination competitiveness matrix, a tool that allows us to understand the area or areas where stakeholders should focus their attention in order to make decisions based on the perception of tourists and residents. In this paper, we present, as an example, the answers collected from the question 'What memories will you take away with you from your visit to the city?', included in the survey carried out to test the 4 C's matrix, using a sample. In the content analysis of this question, only one respondent answered 'Port wine'.

33.1   Introduction

The growing importance of the tourism sector to most of the world's economies is confirmed by data revealed annually by the main official bodies, such as the World

D. Ribeiro (✉) · P. Henriques
CEFAGE-UE, Universidade de Évora, Évora, Portugal
e-mail: diamantinojtribeiro@gmail.com

P. Henriques
e-mail: pdamiao@uevora.pt

L. P. Machado
CEFAGE-UE, Universidade da Madeira, Madeira, Portugal
e-mail: luizpintomachado@gmail.com

Tourism Organisation (WTO), the World Travel and Tourism Council (WTTC) or World Economic Forum (WEF). The increase in tourism leads, *a priori*, to an increase in the competitiveness of tourist destinations. In recent years, this topic has been approached more frequently at the academic level, and researchers have presented several theoretical models for the analysis of the Tourist Destination Competitiveness (TDC); from our point of view, this analysis should have the support of the academy and be carried out using modern and agile instruments.

Oporto and the North of Portugal has been a fast-growing tourism destination in recent years. Port wine is long established as one of the most well-known 'ambassadors' of the country. Thus, we have been carrying out a longitudinal study in order to try to establish a potential link between the tourism competitiveness elements of the region and the value of this one of a kind Portuguese global/country brand.

One of the main reasons for the creation of the 4 C's TDC matrix was the great complexity of the matrices or models for analysing the competitiveness of tourist destinations. The Cs stand for: capacity, competence, communication and creativity. In the case of the 4 C's matrix of the TDC, the intention was to create a uniform and balanced instrument in terms of the number of questions, which is clear in terms of the formulation of each of the questions and consistent with the objectives of each dimension. Another objective aims at the possibility of using the '4 C's tourism destination competitiveness matrix' in an investigative context in other tourist destinations, which can also serve as a basis for comparison between similar realities.

In a business or organisational context, based on the results obtained, stakeholders will be able to verify whether or not their perception is aligned with that of tourists and will be able to prepare specific action, improvement or marketing plans for each identified situation.

After completing several construction stages of the matrix, including validation, two simultaneous actions were carried out: a test of the matrix through a convenience sample and a preliminary analysis of the results obtained.

Therefore, extensive work has been carried out. Within the scope of the topic under study, this instrument will allow, among many other aspects, for us to understand the relationship that tourists perceive between the destination Oporto and the Northern Portugal and the Port wine global brand.

Thus, in this paper, in addition to an overview of the construction of the matrix, the results of that convenience sample are presented. Before that, there is a brief explanation of the theoretical framework on TDC, a description of the two regions and a methodology regarding the importance of Port wine in terms of the economy and tourism.

In short, the creation of a modern TDC analysis tool is an asset for scholars and stakeholders, and it is anticipated that it can be transformed into a fully automated technological tool. In addition, regarding the relationship between this tourist destination and Port wine, as will be seen later, the results obtained through the matrix allowed us to infer that tourists do not perceive a direct relationship between the product (or brand) and the region.

33.2 Tourism Destination Competitiveness

Tourism around the world has become increasingly competitive. The competitiveness factor has been considered, in the literature on tourism, as one of the most crucial elements for the success of tourist destinations. In this study, it was decided to follow the definition of competitiveness presented by Buhalis. This author understands competitiveness as the effort and profitability above the industry average, in particular in which they operate, as well as alternative investment opportunities in other industries [1].

In conceptual terms, the competitiveness of a tourism destination concerns, according to Hassan, the destination's ability to create and integrate value-added products that sustain its resources while maintaining a market position relative to its competitors [2]. Other authors add that tourism destination competitiveness is the ability of a destination to provide goods and services that perform better than other destinations in the aspects of the tourist experience considered important by tourists [3, 4].

Although there seems to be a consensus in the literature on the main objectives of competitiveness, there are several ways to explain and measure competitiveness in the tourism literature [5]. Likewise, many models have been developed to explain, analyse and measure the competitiveness of the destination. Most of these models are exclusively theoretical. The most relevant from our point of view are: the Calgary model by Ritchie and Crouch [6]; the Dwyer and Kim model [7]; the Enright and Newton model [8]; the Gooroochurn and Sugiyarto model [9]; the World Economic Forum 2007 model [10]; the Mazanec, Wöber and Zins model [11]; the Hong model [12]; the Kim model (Kim 2012); the Cvelbar et al. model [13].

Despite the diversity of modules, we believe that the academic approach to the tourist and resident perspective is still reduced. A similar view is defended by Oliveira, Zouain and Souza, who mention that 'although the phenomenon of competitiveness has been the subject of much discussion and academic output in the field of tourism, little is said about the competitiveness of tourism destinations from the point of view of demand, that is, destinations' competitiveness from the perspective of the visitors' [14]. The same happens with regard to the vision between tourists and specialists. In other words, tourists and experts often have different views, for instance, on factors that impact tourism in a destination [15].

33.3 Oporto and Northern Portugal Tourism—Two Regions United by the River, the Wine, the Cultural Heritage and Their Populations

Among the 12 cities analysed (Amsterdam, Berlin, Frankfurt, Geneva, Lisbon, London, Milan, Paris, Oporto, Prague, Rome and Zurich) by Price Waterhouse Coopers (2018), Oporto may be the city that achieved the highest growth in revenue

per room. In 2017, the number of visitors to the city of Oporto reached a total of 1.5 Mio. This increase in tourists was mirrored in the prices of hotel establishments and local accommodation. For example, in the new year, prices in 2017 increased exponentially compared to the same period of the previous year [16].

There are many attributes that make tourists want to visit the city of Oporto. The city presents great cultural diversity, namely through its museums, churches and cultural spaces of high tourist interest. In addition, it was chosen as the European Capital of Culture in 2001, and the same distinction was also obtained by the city of Guimarães in 2012 [17]. At a cultural level, the city has 24 museums, 19 national monuments and has a significant number of places of high tourist interest such as Casa da Música, Casa das Artes, the Port Wine Cellars, the Coliseum of Oporto, Jardim Botânico, Jardim de Serralves, Jardim do Palácio de Cristal, Palácio da Bolsa, the Ribeira area, Foz do Douro and Baixa [18]. Among many other internationally relevant awards, the city of Oporto was chosen three times as the best European destination[1].

Two other important tourist factors that act as catalysts for tourism in Oporto are gastronomy and wines [19, 20]. Portugal has several wine regions, and Portuguese culinary traditions are rich and varied, the latter having been elevated to the status of national heritage in 2000 [21]. In addition, Moreira (1998) states that Portuguese wines are internationally recognised as being of high quality and variety. In fact, regional products have worked as a factor of attractiveness and regional competitiveness.

The Douro region has enormous potential in terms of tourism. Part of the region has been considered a World Heritage Site by UNESCO since 2001, and therefore, it presents a set of diversified and differentiating tourist resources: the Douro River, natural landscapes, historical and architectural heritage, among others [22]. The three largest cities belonging to the Douro Region, considered as emerging destinations in Portugal, are Vila Real, Peso da Régua and Lamego, which belong to the same natural and economic unit, the Alto Douro Wine Region. These three regions are strongly interconnected by institutional, social, economic and cultural ties that have increased in recent years [23].

Regarding its identity, the city of Oporto has long been associated with the famous Port wine. This wine incorporates the name of the city itself, produced in the Douro Valley since the High Middle Ages, in the oldest demarcated wine region in the world.

It can be said that Port wine has shaped the economic, cultural and social landscape of the Douro and Greater Oporto regions. However, these two economies are not similar—the Douro region is still underdeveloped, with around 200,000 inhabitants and 100,000 jobs, with a significant share of jobs being concentrated in wine production. The Greater Oporto region, in turn, is a metropolitan area with almost 1.3 Mio. Inhabitants (about 12% of the population of Portugal) and 600,000 jobs.

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[1]Porto, the ICPC 2019 city host, was chosen as best European destination in 2012, 2014 and again for 2017. Retrieved from ICPC Foundation: https://icpc2019.up.pt/2018/09/20/news-2/index.html. Last accessed in 2020/06/10.

In this region, the percentage of employment in the primary sector is less than 1%, while in the tertiary sector, it is above 70%. In the Douro region, the primary sector is responsible for 38% of employment [24].

More than a gift of nature, Port wine is, in essence, this historical richness—a collective cultural heritage of work and experiences, knowledge and art, which have accumulated for generations. Port wine was and is a key product of the national economy and, even more so, has a symbolic value that distinctly represents Portugal in the world.

In order to assume a prominent position in the market, more and more emphasis should be placed on promoting and developing the image of Port wine on the external markets, promoting the identity of the region, the varieties, the winemaking methods, culture, landscape, traditions in production, quality and wine tourism.

Naturally, Port wine is associated with Portugal. Logos, labels and images related to the product always refer to its tradition and history, promoting the product as a kind of diplomatic bag, a true Portuguese ambassador in the world. They convey a certain concept of 'portugality' (*portugalidade*), exporting not just a product, but a culture and the values of a people [25].

In no way underestimating this view, in the context of this paper, we should ask whether tourists (who during the past few years have helped to create a new dynamic in the region) feel this connection and strong image regarding Port wine.

33.4 The 4 C's Tourism Destination Competitiveness Matrix

The creation of the 4 C's tourism destination competitiveness matrix included a review of the literature on the models considered most relevant as recommended by the literature, indicating that the researcher should define the construct of interest and its dimensions through bibliographic research and consultation with specialists from the region, and with representatives of the population of interest [26, 27]. The development of instruments should encompass three phases: identification of domains, the formation of items and the construction of the instrument [28].

One of the main reasons for the creation of the 4 C's TDC matrix was the great complexity of the matrices or models for analysing the competitiveness of tourist destinations. In the case of the 4 C´s TDC matrix, the intention was to create an instrument that is:

- uniform and balanced in terms of the number of questions,
- clear in terms of formulating each of the questions and.
- consistent with the objectives of the dimension and the questionnaire.

One of the objectives of creating the '4 C's tourism destination competitiveness matrix' was to understand the area or areas in which the heads of the tourist destinations should focus their attention. Another objective is to make it possible to use

Fig. 33.1 4 C's matrix
ID/Logo

the '4 C's tourism destination competitiveness matrix' in an investigative context in other tourist destinations, which can also serve as a basis for comparison between similar realities. Ultimately, a new instrument of analysis should enable those responsible for the management of the destination to obtain data on tourists' and residents' perception of a tourist destination. The data obtained will allow for sustained and focused decision-making.

The construction and consolidation process of the matrix was made up of four phases:

- Preliminary—theoretical review on the tourism destination competitiveness matrices;
- Preparation—use of the Delphi method. Experts in the field of economy and tourism were invited to contribute their experiences in the construction of the survey instrument;
- Test—validation of the questionnaire through the content validity coefficient (CVC);
- Evaluation—a non-probabilistic approach was used, through a convenience sample, to obtain answers from tourists, residents and destination managers.
- The new analysis tool (or matrix) consists of four dimensions: capacity, competence, communication and creativity. A logo[2] has been created to identify this matrix (Fig. 33.1):

The capacity dimension summarises the items representative of the conditions of the destination in relation to infrastructure, equipment and places to visit, namely historical sites such as museums, classified buildings and other points of interest; attractions such as infrastructure for relevant events such as stadiums and arenas; tourism sites such as beaches, countryside, mountains and rivers; places of entertainment and tourist entertainment such as theatres and cultural events; nightlife venues such as bars and clubs; restaurants and other gastro-nomadic places where wine experiences are included; land and air links with other cities and countries.

[2]Intellectual property as well as the icon of the '4 C's tourism destination competitiveness matrix' was registered with the INPI—National Institute of Industrial Property. In the near future, it is possible that this new TDC analysis instrument may have a dedicated technological platform or an app.

The competence dimension includes items related to the training of human resources for serving, welcoming and accompanying tourists, from receptions in public buildings (museums, etc.), transport (ticket sales and passenger assistance), reception in the various infrastructures such as restaurants and clubs.

The communication dimension aggregates items related to the communication, marketing and internal and external dissemination initiatives of the destination, such as signposting at the destination, such as metro and transport from the airport or train stations to the city centre or places where events are held; promotion and dissemination of events on site, through brochures, physical and virtual city maps, the relationship between public and private institutions in promoting the destination, communication on social networks, ease of access and purchase of tickets at events and through online ticket offices, specialised Websites and Internet platforms; accessibility of information, contacts, reservations, bookings and reservations through the main platforms available on the Internet or apps, such as Tripadvisor, Booking, MoMondo, eDreams, Airbnb, Trivago, GetYourGuide, TheFork, among others.

The creativity dimension includes the items that represent the novelties and attractiveness that the destination provides and distinguishes it from other destinations and makes it unique; namely the dynamics and innovation in the destination, the differentiation in relation to other destinations, the prizes received (tourism, gastronomy, etc.); preparation of the destination for events, conferences, etc., differentiation by segmentation (mountain, beach, etc.); attraction for major structuring events, such as sports finals, world exhibitions, international galas and world meetings; relationship and development of structuring projects.

The matrix is anchored in a survey where questions are divided into the four described dimensions. The survey contains 30 questions in total: 9 in the capacity dimension; 10 in the competence dimension; 6 in the communication dimension and 5 in the creativity dimension (Fig. 33.2).

To guarantee the validity of the instrument, several tools have been used, the most relevant were: The Content Validity Coefficient (the contributions received and validated allowed us to create the base matrix with a CVC of 0.8961) and the Delphi Panel.

In global terms, it is believed that this new instrument effectively allows for us to understand which are the area or areas that those responsible for tourist destinations should focus their attention on in order to make decisions based on tourists' and residents' perceptions. Subsequently, the '4 C's tourism destination competitiveness matrix' can be used in an investigative context in different tourist destinations and can also serve as a basis for comparison between similar realities.

33.5 Data Analysis and Results

This point concerns the analysis and discussion of the results obtained in the surveys carried out within the scope of the test in the real context of the 4 C's matrix. The surveys were carried out in person, made available on iPad, in January 2020, to 130

OPINION ABOUT THE CITY REGARDING...

Rate your satisfaction level from 1 to 7, with 1 being the lowest and 7 being the highest.

CAPACITY (Infrastructure, equipment, ...)

Airport;	1 2 3 4 5 6 7 No opinion
Transportation;	1 2 3 4 5 6 7 No opinion
Communication routes (roads, highways, etc.);	1 2 3 4 5 6 7 No opinion
Hotels;	1 2 3 4 5 6 7 No opinion
Restaurants;	1 2 3 4 5 6 7 No opinion
Museums and cultural sites;	1 2 3 4 5 6 7 No opinion
Theme parks, venues for events, etc.;	1 2 3 4 5 6 7 No opinion
Nightlife spots;	1 2 3 4 5 6 7 No opinion
Accessibility for people with reduced mobility.	1 2 3 4 5 6 7 No opinion

COMPETENCE (Training and availability of Human Resources)

Airport;	1 2 3 4 5 6 7 No opinion
Public transport;	1 2 3 4 5 6 7 No opinion
Taxis;	1 2 3 4 5 6 7 No opinion
Other transport (Uber, Cabify, etc.);	1 2 3 4 5 6 7 No opinion
Hotels;	1 2 3 4 5 6 7 No opinion
Restaurants;	1 2 3 4 5 6 7 No opinion
Museums and cultural sites;	1 2 3 4 5 6 7 No opinion
Tourist information services;	1 2 3 4 5 6 7 No opinion
Public authorities (police, SEF, etc.);	1 2 3 4 5 6 7 No opinion
Contact with the public.	1 2 3 4 5 6 7 No opinion

COMMUNICATION (Publicity and promotion)

Signposting in public transport and airport;	1 2 3 4 5 6 7 No opinion
Signposting in streets and roads;	1 2 3 4 5 6 7 No opinion
Printed and virtual maps;	1 2 3 4 5 6 7 No opinion
Promotion of events (cultural, gastronomy, etc.);	1 2 3 4 5 6 7 No opinion
Promotion and advertising of Oporto in your country;	1 2 3 4 5 6 7 No opinion
Promotion and advertising of Oporto in other Countries.	1 2 3 4 5 6 7 No opinion

CREATIVITY (Innovation and identity of the destination which makes it unique)

Cultural events and shows (theatre, music, etc.);	1 2 3 4 5 6 7 No opinion
Sporting events (national/international comp.);	1 2 3 4 5 6 7 No opinion
Gastronomic and wine-related events;	1 2 3 4 5 6 7 No opinion
Restaurants and places of entertainment;	1 2 3 4 5 6 7 No opinion
Communication and promotion of the destination Oporto.	1 2 3 4 5 6 7 No opinion

Fig. 33.2 Survey dimensions

tourists and residents. All responses were considered valid. As it is a convenience sample, the survey concerns the tourist destination 'Oporto'. The data was collected through the Google Drive platform. For the presentation of data and results, tables and graphs were used. The answers to the open questions were analysed through the application of the content analysis technique, using qualitative analysis software.

Content analysis is a research technique that allows for valid and replicable inferences of data to be made from its context. Thus, inferences are made about what can affect the type of interpretation of the analysis, based on the establishment of a relationship between the data obtained [29, 30]. The use of the webQDA tool to analyse the data of this study allowed for the generation of tables (matrices) with the encoded data. Thus, according to [31], the computer-aided qualitative data analysis software (CAQDAS) extends the communication possibilities between researchers in the definition of analysis (categorisation, coding and recoding, etc.) which are fundamental for the construction of synthesis and analysis. To analyse the qualitative responses of the convenience sample, the webQDA qualitative analysis software was used [32–34].

In dealing with the answers obtained on the question 'What memories will you take away with you from your visit to the city?' the following procedures were followed: after the organisation of the file, the data was exported to the qualitative research software webQDA through the 'automatic coding' function. In order to understand and interpret the most frequent words used by respondents in their sentences and thus facilitate the next 'coding' step, word clouds were built through each software for each answer and per participant profile (tourist, resident, manager).

Then, the most relevant ideas transmitted by the respondents' answers were codified.

Thus, in terms and results for the group with the 'tourist' profile, the word cloud initially built (Fig. 33.3), made it possible to create a set of categories that aggregate tourists' opinions and perceptions about their memories of the city.

From the global analysis, the following stand out as memories that tourists will take away with them from the city: culture, the Douro River and history, as can be seen in the figure (or word cloud) above.

It can be seen that there is a strong image that tourists keep of the city—its welcoming nature. The following four categories stand out as memories of the destination: identity, culture, history and safety. The same results indicated in the previous table are shown in the following graph for better disclosure (Graphic 33.1):

Fig. 33.3 Word cloud

Graphic 33.1 Distribution of tourist responses to the question 'What memory will you take with you?'

This 'inverted pyramid' demonstrates that only one tourist out of all the respondents mentioned having kept Port wine as a memory.

33.6 Conclusions

In recent years, the link between tourism and wine has become an asset for both industries, as well as for job creation, iconic infrastructures (meanwhile awarded) and attracting more tourists and, consequently, creating a more active and dynamic society while generating revenue.

Despite the convergence of ideas in relation to the history, prestige and importance of Port wine (cultural, social, economic, agricultural, etc.), there is no evidence of the close creation of synergies between the destination P&NP and the Port wine 'brand'. Likewise, there is no maximisation of Port wine global brand, as a way of creating value and sustainability, particularly in the two sectors where it has a direct influence, as well as in the two regions to which it is directly linked: Oporto-Gaia and the Douro.

Hence, the great need to work on the image of the destination, but also to analyse the main factors that contribute to its competitiveness, improving the weakest points. In terms of analysis, the great complexity of the models or matrices studied by the authors, as recommended in the literature, which suggests that the researcher should define the construct of interest and its dimensions through bibliographic research and consultation with specialists in the area and representatives of the population

of interest [33, 34], led to the creation of the 4 C's tourism destination competitiveness matrix. This instrument followed several academically recognised criteria as a validation process.

With regard to the creation of the 4 C's TDC matrix, it is believed that this new analysis instrument will be highly valid, both to support other researchers in the analysis of TDC destinations and also to compare competitiveness between tourism destinations. In addition, the new matrix may be a working tool for managers and other individuals responsible for tourism. It could serve as a way of understanding the areas in which they should focus their intervention, in order to adjust their performance to the opinions and expectations of tourists and residents, in order to increase their level of satisfaction with the service provided. The next step will be to transform this instrument into a fully digital application.

From the point of view of the qualitative results, extrapolating the results obtained, it is possible to infer tourists' lack of 'emotional' connection to Port wine.

In our point of view, in-depth studies are required to demonstrate the need of a greater interconnection and creation of integrated strategies between the destination P&NP and the Port wine as a brand (also, in our opinion, an in-depth work in relation to the Port wine and Port wine business brands is also urgent). Then, implementation of common sustainability strategies is mandatory.

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Part XI
Social Media and Networking

Chapter 34
An Exploratory Study of Social Selling on LinkedIn: The Concept and Its Implications

Bilro Ricardo Godinho and Loureiro Sandra Maria Correia

Abstract Due to the digital transformation, the purchasing process is evolving and rising the need to reinvent the sales process. Through marketing and sales tools and tactics, social selling presents itself as a strategy that supports the company to position itself at the beginning of consumers' journey. It also allows firms to retake its influence in the decision-making process, through the education of customers, building and strengthening relationships based on trust, customized customers strategies and generation of value and content. Through a qualitative methodology using in-depth interviews, this research aims to shed light on a topic that is still underexplored and to propose the application of this strategy in firms. From this study, both theoretical and managerial implications are offered.

34.1 Introduction

In recent years, we have seen the emergence of a new concept, Smarketing [1]. It is the union of sales and marketing to generate more results for firms and using each department as a driver of the other. The marketing department attracts customers, converts them into qualified leads and produces relevant materials to nurture the relationship. In this way, the sales team approaches lead in a more conscious and personalized way to close a deal. It was in this scenario that social selling emerged [2] a strategy that uses social networks, especially LinkedIn, as a tool to find the right customers, create and strengthen relationships and network of contacts, networking, promotion of personal marketing and consequently, the achievement of sales objectives [3]. Social selling is also a tool that allows easier access to decision-makers, without having to go first by the assistant or secretary to eventually be able to present their product or service to the decision-makers.

B. Ricardo Godinho (✉) · L. Sandra Maria Correia
Instituto Universitário de Lisboa (ISCTE-IUL), Business Research Unit (BRU-IUL), Lisboa, Portugal
e-mail: bilro.ricardo@gmail.com

L. Sandra Maria Correia
e-mail: sandramloureiro@netcabo.pt

A major challenge of social selling is to have the engagement of the entire organization since it suggests that the sales process is not just the function of the sales and marketing teams. For generations before millennials, this online interaction can generate discomfort, insecurity and lack of credibility, because they do not yet realize the enormous potential for business transformation that the tool can bring [4]. Some major companies have already adopted social selling and are producing relevant results. A study conducted by Sales for Life [5], with 515 customers, showed that 78% of sellers of companies that have a defined social selling strategy reached their sales quotas, against only 38% of sellers of companies that do not use social selling. The main objective of this work is to give notoriety to a concept still incipient in many markets, present a new approach that has the potential to create new opportunities, strengthen relationships and boost business and develop a social selling strategy that is replicable for various organizations.

34.2 Literature Review

34.2.1 Smarketing

Hughes, Gray and Whicher [1] claim that smarketing can be seen as a difficult concept to apply in organizations, but that it is necessary for business growth. Through the adoption of a strategy of implementation and change of mindset, it is possible to achieve excellent results in the longterm. Huges, Gray and Whicher [1] also point out that it is essential to have internal "sponsors" of this change, who have a great influence on the team. They need to see the long-term benefits and objectives of smarketing adoption so that they can "sell" the idea to other employees in the organization. In a study conducted by Zazzle Media [6], the percentage of respondents who stated that marketing is integrated with other areas of the business increased to 89% (in 2018 this number was 45%), which reflects a greater knowledge of decision-makers and plans executors. Integrated campaigns can lead to better results and proven R.O.I.

34.2.2 Social Networks and LinkedIn

Opreana and Vinerean [7] claim that social networks have profoundly transformed the way information spreads by making it incredibly easy to share and digest information online. Additionally, social networks amplify the impact of an organization's content and enable collaboration and co-creation of products and campaigns with consumers. Moore et al. [8] define social networks as Internet-based applications to facilitate the creation and exchange of content and point out that communications between company and consumer are increasing increasingly through the use of this channel. Tikkanen, Hietanen, Henttonen and Rokka [9] present another advantage of social

networks, the possibility of providing and receiving, quickly, relevant information from customers.

Moreover, Agnihotri, Kothandaraman, Kashyap and Singh [10] highlight two main objectives of social networks: (i) the creation of digital content and (ii) interactions with contact networks, which apparently can overlap, but also allow different results. Society has realized that social networks can be more than a place of connection with their acquaintances and family members, as they can also empower them if we consider the high flow of information present in these channels. Organizations have already begun to realize the value in implementing strategies in social networks. However, they present slower movement of these strategies [11]. Andzulis et al. [11] argue that, in an organization, the sales department is the one that has the most significant potential for change with technological advances, since all aspects of sales and sales management can be affected by the use of social networks. As consumers' expectations for brands increase, they expect to be rewarded for their loyalty and expect to receive special offers. More than that, consumers expect to be educated about the products and services offered to them [11].

Over time and through the process of digital transformation, some companies are adding social networks as an additional sales channel, while others will have them as the primary promotion channel. Whether this format is feasible or not will depend on consumer demand and time, but undoubtedly social networks will be the backbone of the strategy that will dictate how consumers and businesses will collaborate to co-create value in the purchasing process [11]. Social selling is not limited to a single social network, but rather to the creation of profiles, in different social networks, which focus on the final consumer (Shanks 2016). However, Hughes and Reynolds [12] point to social networks as the most used social networks in social selling is LinkedIn.

According to a study conducted by Feedback Systems with 300 sales professionals, 84.1% claim to use LinkedIn as the leading social selling platform. Baltes [13] quoted a survey that states that 94% of marketers use LinkedIn as a way to distribute content. Agnihotri et al. [10] identify LinkedIn as a tool that uses the strategy of transmitting the message to the consumer and identifies it as a "network facilitator", which allows the connection with friends, customers and influencers and that relate to networks and communities. Through the recommendations obtained through the network, sellers can strengthen their skills. Paliszkiewicz and Madrasawicka [14] present LinkedIn as a social network dedicated to professionals and focusing on business relationships and interactions. The social network can be used as a platform to generate awareness and gain referrals. According to Zekic [15], there are five main reasons for people to use LinkedIn: career progression, information and news about the industry in which they work, keep in touch with business contacts, networking and generate leads.

LinkedIn has developed a daily updated metric that helps measure social selling efforts made through the social selling index tool. This index measures the effectiveness of each person on a scale from 0 to 100 and compares the power of each person's profile with their network of contacts and with people in their industry, using as a basis four pillars of the same importance [16].

34.2.3 Social Selling

While relationship marketing focuses on creating and strengthening the business-to-consumer relationship, social selling aims to create and strengthen relationships between people, company employees and consumers (human to human). Hughes and Reynolds [12] point to the sales process and traditional marketing as something challenging and highly biased. Both can be seen with an interruption to the work of top executives. In order for a seller to be able to present their product or service to the executive, they must first be able to convince their assistant that the proposal to be submitted will bring benefits to the company. Then, even if the seller manages to overcome this first barrier, there is still a bias to be overcome: Generally, sellers arise in the final phase of the purchase journey, at the time of the decision, and tend to sell the product or service they want/have in their sales portfolios and not necessarily what their customer needs. Social selling emerges as a new way of buying and not as a new way of selling; that is, the focus of the process becomes the buyer and no longer the seller. According to this new approach, the seller must interact with their customers early in the shopping journey, in order to be able to regain control and influence on purchasing decisions [12].

Moore, Raymond and Hopkins [8] point to social, social CRM and social selling networks as emerging fields of study related to sales management and claim that B2B sales teams have benefited more from social selling strategies than B2C sales due to the nature of these types of sales. Powell [17] states that although social selling happens on social networks, it differs from social media marketing in some respects. It was assumed that social interaction provided some benefits, such as privileged access to clients, early discovery of customer needs and references that resulted in revenues [10]. The same authors cite OgilvyOne's research in which nearly half of buyers identify an increase in social networks in the buying process. However, only 9% of sales teams report that their organizations are focusing on social media actions. Therefore, despite the interest of buyers, organizations are still slow and sceptical in adopting social strategies as a sales driver. Still, according to Agnihotri, et al. [10], customer involvement occurs through repeated interactions on social networks between buyer and seller, in which feedback, positive or negative, strengthens or weakens the relationships between the parties. Sellers can increase consumer commitment by reaffirming, through blogs and social interactions, their experiences, especially if they are selling complex products.

Also, according to Hughes and Reynolds [12], a significant challenge of social selling is to have the sales team and its top executives engaged in social networks because they do not yet realize the enormous potential for business transformation that the tool can bring. Zekic [15] says that one of the main factors for a successful social selling strategy is consistency in how a person interacts with their network of contacts. The author suggests that LinkedIn should be the primary lead generation tool and has developed a methodology, "The Magic 5 Formula", to support the creation of the sales funnel and lead generation: positioning (strong personal brand creation), customizing (search for optimal connection), connection (how to approach

to connect), engaging (how to interact with the customer and generate value?) and conversion (conversion into sales). Contrary to what one imagines, social selling is much more than just selling. For an effective social selling strategy, it is necessary, at first, to create and strengthen the relationship. It is also essential to listen carefully to what customers are saying on social media about the problems at work or even about personal issues and preferences, offer relevant insights based on the information collected in the surveys, offer something personalized for each customer [12]. Shanks [18] states that regardless of how effective a company's sales process is, it will always start its digital transformation process into small processes.

34.3 Methodology

The methodology adopted in this study is qualitative research. The qualitative research was carried out through semi-structured interviews with specialists in the area of social selling, conducted through face-to-face interviews. This method was chosen following the aim of this research, which is to obtain insights from experts and based on that, to shed light to a pattern of social selling implementation efficiently and replicable. Researchers used a semi-structured interview script, with open questions applied to social selling specialists. The script consisted of nine open questions, aiming better understanding the experts' perspective. The interviews took place between April and July 2019. During this period, 18 interviews were conducted (see Appendix A for sample details).

The analysis of qualitative research information, through semi-structured interviews, was performed through content analysis. All interviews were recorded, with the consent of the participants. After the interview period, the content obtained was analysed. Of the 18 respondents, 28% are women, and 72% are men. There is vast dispersion in terms of nationalities in our sample: Portuguese (4), English and German (three each), Dutch and American (2 each), and Brazilian, Italian, Canadian and Spanish (one each).

34.4 Data Analysis

By starting the content analysis of the data obtained in the interviews, it was observed that the interviewees have a very close line of thought in several questions related to the theme. In the first question of the interview "What is social selling?", 83% of respondents used the term "empowering social networks", of which 53% said the goal is to "create and/or strengthen relationships". The 17% who did not use the term "boost sales" defined social selling as "a way to create and/or strengthen relationships". In addition, 39% of the interviewees did not explicitly mention the importance of relationship building and focused on "optimization/evolution of the sales process". Additionally, many respondents said that the term social selling does

not live up to what the concept seeks to convey and can cause confusion by being often confused with social media marketing and digital marketing. Some respondents suggested other names such as modern selling, educational selling, valuable selling and digital selling.

In the second question, respondents should point out the main differences between traditional marketing and sales strategies (ads, cold calling) and modern strategies (social selling). Three of the interviewees (E, N and P) cite social selling as a complementary strategy; that is, social selling did not emerge as a substitute approach to traditional strategies, but as something that comes to add and enhance the relationship and consequently sales. Respondents H, J, L and M go further by saying that there has been a change in people's buying behaviour, since the buyer has much more access to information than in the past; in this way, social selling emerges as a more assertive strategy to go against this change in behaviour and mindset. Respondents A and C pointed out the fact that it is always online as an advantage of social selling concerning traditional approaches. Respondents D, F, G, H, O and R pointed out the lack of personalization and a more relaxed approach as a characteristic of traditional strategies, in which the focus is on the number of contacts and not on quality. Still on traditional sales, respondents B and Q pointed out that the traditional form is based on an interruptive approach and a provocation of the sale. Social selling, on the other hand, defends the creation and strengthening of relationships, through content sharing, gaining confidence, personalization of the message and value creation (interviewees B, D, G, H, I, O, Q and R). Respondents F and N complement that through social selling, it is possible to reduce the customering time and allows the best measurement of results. Finally, interviewee K says that social selling emerges as a more natural way to reach customers.

With the third question, we seek to understand the reasons why the interviewees believed that companies should adopt social selling so that they could understand the value that each of them gives to the strategy. Seven of the 18 respondents (C, L, M, N, O, P and R) stated that companies should adopt social selling to be ahead of the competition. Respondents O and P cited the case of Netflix and Blockbuster as an example, in which the market-leading company (Blockbuster) lost market to its competitor, new entrant in the segment because it could not see the transformations in its market and when it did, it was too late to recover. Respondent M added that companies that do not adopt social selling might lose business, employees and revenues over time. Also, in the third question, six interviewees (B, E, G, J, Q and R) mentioned the increased influence of the company and greater reach of customers. Respondent J added that LinkedIn in the UK and Portugal has almost the same number of users as the number of workers in the labour market and that no other strategy allows a similar reach. Respondents D, F and G mentioned that it is a low-cost strategy, complementing by D that this should be a complementary strategy to the others, which will represent an increase in the result. Respondents F, I and Q cited greater time efficiency as a reason for implementing the strategy. Respondents I and K point to the expansion of the company's results as the reason for the adoption of the strategy. Finally, respondents A and H stated that the adoption of the strategy allows

companies to position themselves earlier on the shopping journey and communicate with their customers while still in the awareness phase.

The next question concerns the main barriers and challenges that companies encounter when trying to implement the strategy. The main barriers pointed out where the change of mindset (B, C, E, G, J, N, O and R), followed by fear/difficulty of strategy change (A, B, C, I, N, O and P), adoption of the strategy (A, D, E, K, M and R), time (C, G, N, O, P and R), lack of knowledge of the strategy (B, F, K and Q) and buy-in of the top managers (H, N and R), corroborating the vision of Hughes and Reynolds (2016). The term "fear" was also mentioned as a barrier, related to privacy (L), change (B and O) and fear in general (C). Interviewee B also cited as a barrier to the lack of teaching of the strategy in schools and universities, since few courses address the theme. In the fifth question, the interviewees were asked to think of social selling as a process and to describe what can be the implementation stages for this strategy in firms. As expected, the experts structured the process differently, but many of them used the same steps. Respondents A, D, G, H, I, L, M, N, O, P, Q and R pointed out that one of the first stages should be "awareness", training to explain the concept of social selling to employees and how the company and employees can benefit from adoption. Interviewee I add that changing mindset and behaviour is essential in this process. Other steps pointed out by the interviewees were the definition of the objectives to be achieved by the strategy (E, G, N, O, P and R), creation and strengthening of the personal brand (C, D, P and R), enhancing connections (C, D and R), defining and potentiating the tools to be used (F, G, O and P), promoting engagement (C and R). Respondents C, F, H, L, N and Q pointed out that training is not enough and that there should be a coaching programme to support the adoption of the strategy. Respondents A and L also mention the importance of having an ambassador.

With the sixth question, we tried to understand what were the main objections that companies point not to adopt social selling in their marketing and sales strategies, to from the objections create arguments that could circumvent them or minimize them. The primary response was the buy-in of management and employees (A, B, D, H, I, N and P), followed by change, be it behaviour change or resistance or fear of change (C, H, M and R). Other objections pointed out were lack of time to apply the strategy (C, N and O), delay to achieve results (C, F and R), difficulty in adapting the strategy in different cultures (N, O and P). We also pointed out the lack of knowledge of tools to support the strategy (E and L), the difficulty of clear understanding of the strategy (J and K) and the fear or aversion to technology (O and Q).

As the main goal of this study is to give notoriety to social selling concept, which is still incipient in many markets, the next question sought to understand what fundamental skills teams must possess in order for the strategy to be successful. The main point mentioned by the experts was "being open to change/ will" (E, F, J, H and O), followed by leadership, reinforcing the idea that the strategy has a better chance of success if there are examples to be followed, the social selling ambassadors (D, I, O and R). Other points mentioned were the collaboration between teams, as social selling will not bring significant results to the organization if there is no engagement and commitment of all or at least most employees (C, G, L and R) and the ease and

knowledge of the technologies that support the strategy (A, B, F and Q). Other skills pointed out were patience, because this is not a short-term strategy (C, M and N) and ease of communication, so it is possible to create relevant content which directs the conversation to the product and not by the product to be offered (K, L and P).

34.5   Conclusions

In the past, salespeople were the holders of the selling power, as they were the ones who possessed the information relating to the products and services offered by the organizations. With increased competition and greater access to information, consumers began to hold power in the purchasing process. Most consumers do an online search or go through their network of contacts before contacting a seller, which positions them at the end of the purchase process and reducing their power of influence. Social selling has emerged as a firm's response to the new consumers' journey, allowing salespeople and firms that make use of this strategy to position themselves again at the beginning of the purchasing journey.

Although this is not an entirely new topic, social selling is still an underexplored topic. Also, there are still many misperceptions regarding the topic and other marketing concepts, such as relationship marketing or social media marketing. About the first, the main difference is that relationship marketing focuses on creating and strengthening the relationship between the firm and the consumer (Business to Consumer), while social selling aims to create and strengthen relationships between people, company employees and consumers (we can use the term Human to Human—H2H). Concerning social media marketing, it seeks on generating brand awareness for the brand and has communication centred on the ideal target audience of the brand, while social selling focuses on building a personalized and individual relationship with the customer. Another relevant misperception about this topic is the awareness that it is a role only for the marketing and sales department. Social selling can and should be a strategy adopted by all employees, who, through their networks of contacts and by strengthening their brands, can help the company to leverage business and achieve more customers.

34.5.1   *Theoretical and Managerial Implications*

The main goal of this study is to shed light to the social selling topic, which could be applied in the real environment of organizations, and to understand the difficulties encountered by companies and employees while putting on practice social selling. The previous studies show that companies that have integrated the marketing and sales departments have achieved success in social selling strategies as the flow of internal communication has improved and those functions can act together to solve the problems of current customers and customers.

The present research contributes to the knowledge about social selling, as it moves forward the existing theoretical framework, based on interviewees with experts that aligned their practical application of social selling in firms, so we can reach more practical conclusions, enriching the debate on this topic. Social selling is an underexplored topic in academia, but practitioners are devoting more and more attention to this phenomenon. For this concept to gain more prominence, we need more empirical research to be made so that we can contribute to the dissemination of this topic.

The name of the concept is also something to debate. The most explicit association one can make is that it is a sale that takes place in the online environment. Actually, what occurs in the online environment is the creation and strengthening of relationships, which over time can be transported to the offline environment, with contacts and business happening in a smoother, faster and spontaneous way. In this research, several experts suggested other terms that more appropriately could address the topic, such as modern selling, educational selling, valuable selling or digital selling. However, further research is also needed on this to understand if those terms are still placing much emphasis on the "selling" part and not on the "relationship" or "engagement" part.

The adoption of social selling in firms represents many challenges, as it is linked to the change of organizational mindset and employees. Two of the main barriers pointed out by the experts interviewed were the internal commitment and top management. Also, as it is a long-term strategy, it requires commitment, persistence, adaptation of the work routine, adaptation to new technologies and personal exposure, which for more conventional employees can pose an extra challenge. For a right adoption of the strategy in firms, it is necessary to create a plan of how to fit it into the current strategies, creating quick wins stages so that employees see some quick results and do not discourage throughout the process, which facilitates internal communication and value and enhances the skills of each employee. It is also essential that managers and firms' leaders to be able to make proper change management and follow-up of the process, ensuring that all employees could fit into the new methodology. A good example of a strategy is to have a "social selling champion" inside the firm to be used as a benchmark. Finally, despite being a strategy that arises from the online environment, the main objective is to be able to transport relationships to the physical environment, leading the customer journey.

34.5.2 Future Research and Limitations

Many firms still do not have a clear and well-defined plan for their digital strategy, and social selling may fit into the new type of digital strategies for many firms, which highlight the need for more empirical research. The present research is an exploratory study performed with a small sample of social selling specialists. Future studies should develop quantitative research with a broader sample so that we can gain new insights. Also, the previous studies show that social selling is more likely to succeed in B2B businesses. An opportunity is to understand if this is, in fact,

accurate, or if other favourable segments may have better results with this type of strategy.

Appendix 1: Sample Description

Interviewees	Performing social selling (in months)
A	36
B	36
C	18
D	32
E	108
F	24
G	16
H	16
I	48
J	12
K	42
L	4
M	78
N	48
O	52
P	18
Q	84
R	40

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Chapter 35
Information Technologies in Social Entrepreneurship

Vera Esteves, Pedro Malta, Henrique Mamede, and Vitor Santos

Abstract Social organizations are usually subject to a high number of requests. In addition, it deals with a variety of problems to which an answer is needed. In this context, it is important to understand how these organizations can better support their process activity: Can technologies help to solve the problems of social organizations in a more efficient way, bringing greater benefits to the community? This paper presents a study on the use of information technologies in Portuguese social organizations to meet the needs of these organizations in responding to current challenges.

35.1 Introduction

As a result of the economic crisis, particularly in Portugal, we have witnessed the emergence of several social entrepreneurship (SE) initiatives. Some entrepreneurs focus their attention on creating innovative social, cultural and environmental responses in order to respond to economic and social needs [26]. In addition, the economic crisis brought the opportunity to create these entrepreneurial companies [25].

SE manifests itself in different ways, from initiatives initiated by non-profit organizations, in its purest state, to the action of organizations that combine philanthropy with operational management models [6]. Three lines of research on the entrepreneur

V. Esteves · P. Malta (✉) · V. Santos
NOVAIMS da Universidade Nova de Lisboa, Lisboa, Portugal
e-mail: pmalta@novaims.unl.pt

V. Esteves
e-mail: M2015257@isegi.unl.pt

V. Santos
e-mail: vsantos@novaims.unl.pt

H. Mamede
Departamento de Ciências E Tecnologia, INESC TEC, Universidade Aberta, Lisboa, Portugal
e-mail: hsmamede@gmail.com

profile can be identified: Hayek's Social DIY [8], Kirzner's Social Builders [11] and Social Engineers from Schumpeter [23]. The profile of the social entrepreneur highlights people who identify a flaw in society that turns it into a business opportunity, recruit and motivate others for their cause, while creating networks of contacts with key people. And they become entrepreneurs because they want to change society, they are uncomfortable with some characteristic of society, they have altruistic feelings, and they need to be socially responsible [13]. In addition, they do everything in their power to alleviate the problem they want to solve, even though they often need help from other entities and experts to increase results, do a better job, better manage resources and benefit more people.

The concern about using the appropriate technologies to boost SE should be considered: Mainly because the world is entering the fourth industrial revolution, storage and processing capacities are increasing exponentially, and information technologies are the basis of this revolution. Thus, even with the awareness of these entrepreneurs focused on the social problem [1], for the success of the initiative, there is still much to learn in the areas of management and technology adoption.

Thus, both the public administration and the entities dedicated to SE in Portugal, can gain relevance and trigger more initiatives in the field. To achieve this objective, it will be necessary to acquire more knowledge and awareness about the benefits that technology, or more specifically, that information technologies (IT) can provide to social organizations.

In this sense, we have identified the different entities and initiatives that support and promote social entrepreneurship, and we were able to evidence the existence of numerous awards and support programs for social organizations in Portugal. There are also other entities that are open to listening to new social projects, such as the PT foundation or other international organizations that finance projects in Portugal, such as Robert Bosch Stifung, Fondation d'Entreprise AirFrance, Guerrilla Foundation, Addax & Oryx Foundation or Oak Foundation.

To achieve this goal and help make SE activity more effective, this study proposes a framework for the appropriate use of IT for each type of social organization.

In this paper, we will: (a) characterize the social organizations that operate in Portugal; (b) study the main contributions that information technologies can bring to help improve the performance of each type of social organization; and (c) define which information technologies have the greatest potential for help meet needs and current challenges.

35.2 Information Technologies at the Service of Social Entrepreneurship

There are numerous SE entities that can benefit from the adoption of IT in their daily lives, but have not yet adopted it [7]. Considering frameworks that can contribute to supporting IT adoption decisions is an essential issue. The main frameworks

are: networked readiness (NRI) [7], diffusion of innovation (DOI) and technology, organization and environment (TOE) [18].

The NRI framework measures the countries' ability to leverage information technologies in order to increase competitiveness and well-being [7].

Since 2001, NRI has proven to be an important tool for identifying differences, channeling actions, structuring a policy for dialogue and tracking the progress of IT readiness over time.

This set of frameworks for IT adoption, focusing on the impact they can have on innovation, led the Fórum Económico Mundial [7]to identify ways to recognize this relationship:

- R&D and basic research: there are new technologies in the range of tools used in research and cost reduction in research activities that were previously unaffordable. They allow for more accurate conclusions based on large amounts of data and allow for more extensive research;
- Product and process novation: digital technology enables the creation of new products and services and improves the existing production systems, allowing a reduction in costs;
- New business model: digital technologies are enabling companies to reinvent their business models;
- Increase in market size: with technology, markets are closer, since there is a reduction in communication costs and an increase in the efficiency of research-meetings, which increases the pressure of competitiveness;
- Reduction of the barrier for creating new projects: new online services, such as the cloud and online marketing platforms are saving a significant percentage of fixed costs for startups and small- and medium-sized companies. This facilitates the creation and scalability of new projects;
- Acquisition and leverage of knowledge about consumers: Big data is providing companies with the opportunity to better understand their customers' consumption patterns, which increases the pressure on competing companies to also innovate.

However, it is necessary to clearly identify the IT that is useful in this context and can be used by social organizations. Considering the activities and areas in which these social organizations are located, the ITs to be considered must also meet the forms of promoting decision making. Thus, we consider IT that falls within the scope of the concepts of enterprise resource planning (ERP), customer relationship management (CRM), business intelligence (BI), data mining (DM) and artificial intelligence (AI).

ERP is a set of systems and software used by organizations to manage some of the daily tasks of their businesses, such as accounting, procurement, project management and production [19]. The implementation of an ERP system will contribute to the automation and improvement of low-level transactions and processes, leaving more time and resources for companies to focus on more critical and complex activities [24]. Through a centralized database, an ERP offers real-time data and allows workers to be more innovative and flexible [4]. In addition, the integration of systems,

data and information processes increases the ability to process information and therefore confidence and speed in decision making [9]. Without an ERP system, small and medium enterprises, as a rule, base their support on business processes and performance monitoring, on Excel spreadsheets or on other isolated tools [12]. As a result, companies may have less accurate reporting and performance processes [5]. The main benefits are standardization, visualization of important data in a single window, efficient use of data from the database, automation of the company's main processes, improved visualization and accessibility of data through different locations and platforms [24].

CRM is a technology that allows a company to manage all relationships and interactions with its customers, current or potential. Its objective is to improve business relationships [21]. CRM is a fundamental tool for companies to respond more assertively to what the customer wants, allowing them to know him it in more detail, especially in a global and extremely competitive market, such as the one that currently exists [15]. CRM is directly related to new information technologies and it is possible to automate the activities of memorization and data processing, implement various analyzes and make contacts with customers through the available channels [10].

Business intelligence is defined as a wide category of applications, technologies and processes to collect, store, access and analyze data, in order to provide better decision making to users [27]. There are several definitions of business intelligence [17], because BI is a productive process whose raw material is information and the final product is knowledge. Moss and Atre [16]state that BI is not a product or a system, they consider it as an integrated operational architecture and a set of decision support applications that provide a community with better accessibility to business data. BI can also be considered a term "umbrella" that combines architecture, tools, databases, analytical tools, applications and methodologies (Gartner, Inc).

Data mining is another information technology that can be extremely useful for organizations. In the current context, it is essential to create value (tangible and intangible) and increase productivity (technology and know-how and in this way, translate resources into desired outputs in the market and resources within the company in order to produce goods and services). Currently, companies have an increasing volume of data, and it is expected that this value will only increase. However, the estimates point that less than 10% of the data created are minimally organized or developed and this percentage should decrease as the data production increases [2]. According to McKinsey Global Institute (2011), data has invaded all sectors and business processes and is now an important factor in the organization, as well as human resources and capital. Data mining is a very useful tool for companies to value the large databases they have.

Artificial intelligence is a subfield of computer science that studies the ability of computers to perform actions that require human intelligence, rather than routine processing. Actions such as reasoning, color perception, language comprehension, vision, object manipulation, world navigation and learning are subfields of AI and all combined result in an intelligence entity that, in this case, would be artificial, and not natural [20]. AI is an area that originated in the last century (1950) and has since been structured in different areas. In 2017, MIT and BCG carried out a study on the

topic "Reformulate the Business using Artificial Intelligence," which involved more than 3000 executives from different sectors globally. Three quarters of executives believe that AI will allow companies to enter new business,almost 85% believe that AI will allow companies to gain or maintain a competitive advantage; however, only one in five companies has incorporated AI into any offer or process so far.

SE organizations can use IT for all aspects of the process (budgets, strategic planning, human resources, fundraising and knowledge management and project evaluation) [22]. To implement those technologies, organizations must first overcome the fear of measuring and evaluating their work in order to realize the various benefits of culture of measurement, and second, there must be a conceptual shift in the focus of proving the impact to improve performance. Third, it must increase the organization's capacity, create better tools and develop common standards [22].

These non-profit organizations face three major performance challenges: the lack of the ability to articulate and measure performance, the lack of tools to track and report data performance and the lack of standards for reporting and interpreting measures. To implement information technologies, social investors must make this investment knowing that, in the long run, valuable information will be available [22]. This investment may be one that will bring greater social return to the sector. The practical steps suggested by the author are: demystify and encourage the importance of performance, create infrastructure for measurement and start measuring something.

In this sense, ERP and, particularly, CRM for customer relations, can help organizations in their daily operations.

35.3 Research Methodology

The research strategy was survey, one of the most used in the social sciences, such as social entrepreneurship [28]. In this investigation, due to time and financial restrictions, it was not possible to present the questionnaire, an instrument used in a quantitative approach, to all social organizations in the country. However, it was possible to present to the associations representing 93% of social organizations in Portugal.

35.3.1 Data Collection

The research instrument, the questionnaire was built with goal of collecting data in four main parts:

- Questions about the use of information technologies in the day-to-day life of the organization, in order to understand how these social organizations are managed today;

- Questions of intention, in order to understand whether social organizations are open to the introduction of ERP and CRM in their operation and to understand which tasks can benefit the most. For these questions, the Likert scale was used, in which 1 strongly disagrees and 5 is entirely in agreement;
- Questions related to awards and programs to support social entrepreneurship, in order to understand whether some of these awards allowed or encouraged the adoption of information technologies;
- and, finally, the characterization of the social organization: seniority, typology, legal status, number of employees, number of beneficiaries per year, area of activity and geographical location.

Also, at the end of the questionnaire, there was an open question, in order to allow suggestions to improve it.

The questions were created with two types of scales: nominal and interval. The nominal scale corresponds to questions that have two or more answer options and where the options identify objects. In this case, objects are assigned mutually exclusive characteristics, and there is no ordering for response options. On the interval scale, objects representing categories are assigned numbers and the intervals between adjacent classifications are the same.

35.3.2   Sampling and Data Processing

The sample of this study is representative of the various types that constitute the third sector in Portugal: cooperatives, "mutualities," associations, "Misericórdias" and foundations. Most responses come from associations as they represent 93% of social organizations in Portugal. The initial objective was to have a sample of more than 50 organizations, in order to have a broad perception of the object of study.

In this sense, for the validation of the constructed model, pre-tests were carried out with some social organizations to validate the questionnaire. After obtaining the answers to the questionnaires, they were cleaned, validated and analyzed.

35.4   Study

The analysis focused on 69 responses to the questionnaire. The sample was characterized according to the following aspects:

- Seniority: the majority of responses came from organizations over 10 year old, which gives great stability and where the processes must already be rooted;
- Types of social organizations: the vast majority are Associations; this was to be expected since the majority of social organizations in Portugal are Associations (93%, INE 2016), with the IPSS legal framework being the most common;

- Regions: Twenty-five organizations have projects underway in the Lisbon Metropolitan Area, twenty-four streamline activities in the North and twenty-one in the center. The Algarve received only four nominations and Alentejo six. No responses were obtained from organizations with projects taking place in the autonomous regions.
- Size: the largest number of responses (28) came from organizations with a higher number of employees (>31 employees); however, it should be noted that the number of beneficiaries is independent of the number of employees, as there were quite a few responses scattered: 16 for <100 beneficiaries, 11 for the 101–250 range, 16 for the 251–500, 6 for the 501–1000 and 13 for the >1001;
- Areas of expertise: the most suitable category was "Action and Social Security" (42 responses), followed by "Health and Well-Being" (23 responses), "Teaching and Research" (16 responses) and "Culture, Sports and Playground" (13 replies).

It was intended to analyze the responses of individuals with a managerial role in a social organization, and therefore, only 62 of the 69 questionnaires answered that respected this criterion were analyzed.

The analysis of the questionnaires began by trying to understand the main tasks of the day-to-day activities of social organizations. The two most mentioned tasks were management and employee management and, in third place, the fundraising task. The gap between 73% (45) and 27% (17) of organizations that use software to support their activities and those that do not actually use them was immediately identified. Of those who use software, Excel is the most used (34), following ERPs (27). In this context, and although there is some balance in the use (47%) or non-use (53%) of ERPs, it was possible to list in order of quantity of responses the market solutions actually used: ERP Primavera, F3M, Sage and SAP, with F3M being the solution developed specifically for social organizations. The level of knowledge of respondents from the list of identified ERPs was also identified, with the following sequence: Sage (27), ERP Primavera (23), SAP (20) and F3M (19). It should also be noted that 18 of the respondents do not know the listed ERPs, as the organizations they manage use programs for the management of nursing homes (Fig. 35.1).

Since there are programs focused on social entrepreneurship, with prizes included, when asked if they had already benefited from some software to support the activities of social organizations or from a program or promotion prize in such a program, 65% of respondents replied that they did not.

Those who answered affirmatively (35%), 9 indicated that they won the EDP Solidária Award from the EDP Foundation, the Bootcamp from the Social Entrepreneurship Institute was mentioned six times and the BPI Capacitar Award 5 times. The Bolsa de Valores Socias, ISEP Portugal, Impact Generator and the BPI Solidário Award were mentioned four times. In addition to the options listed, the Calouste Gulbenkian Foundation's Partis, EEAGrants, Lisbon City Council's Bip Zip, Ren-Agir Award, Dr. Leonilda Aurora da Silva Matos Award, Missão Sorriso do Continente and Caixa Agrícola were also mentioned.

In addition, in this context, 36% of the awards were given for the use of IT: The adoption/use of technologies by these organizations has a greater influence on the
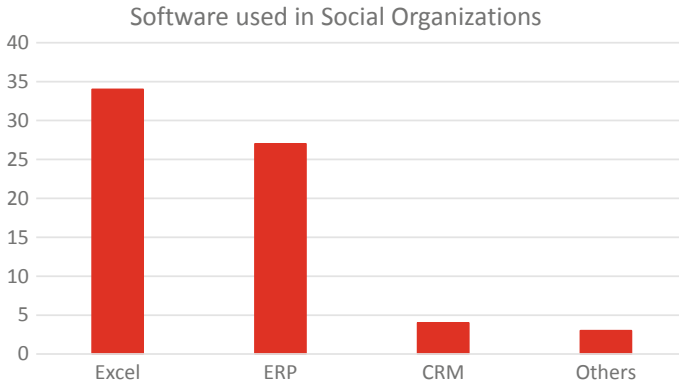
Fig. 35.1 Software used in social organizations

EDP awards. It was also observed that the interviewees recognize the benefits that information technologies can bring to their organization: seventy-one percentage of the interviewees answered the maximum of the scale (5)—I totally agree, 19% answered the second largest of the scale and 10% answered in the middle of the scale. No one responded below the middle of the scale, which indicates that respondents recognize the importance of information technology for the functioning of their organizations.

Thirty-five percentage of respondents were also asked whether there is an intention to implement IT, that is, whether it is a priority to use technology: Sixty percentage intend to do so (two higher levels of intention, 33 and 27%). It was also asked which tasks of social organizations can benefit from using an ERP, or in particular CRM. The management task was the one that had the greatest choice of respondents at the maximum level of the intention scale. It is followed by the accounting management task and immediately after the employee management task.

In parallel with the ERPs, we sought to understand what was happening with the use of web/mobile applications. In this context, 25 know about eSolidar and 15 solidarity purchase, which are the best known on the list. However, 28 of the respondents do not know the applications listed. Even so, it was possible to understand that these applications bring benefits to social organizations (85% of the respondents answered yes) and which ones really support this perception: eSolidar (40 responses), solidarity purchase (33 responses) and the zoom platform (20 responses).

35.5 Discussion

Most of the social organizations that responded to the study have existed for at least 10 year as service providers in the sector, typically with IPSS status and employing 31 or more employees.

Regarding the number of beneficiaries/years they receive, these social organizations are classified in three categories: small, medium and large. The main area of activity is action and social security, followed by health and well-being. In terms of geographical distribution, a balanced scope was possible, with 25 organizations participating in this study being from Lisbon Metropolitan Area, 24 from the North and 21 from the Center. The main daily tasks of organizations are: management, employee management, fundraising, beneficiary management, accounting management and training management. Seventy-three percentage of the organizations surveyed say they already use some type of software to support the execution of the main daily tasks.

However, in half of the organizations, the software used is Excel, which is a powerful tool, but not specific to social organizations. Most of the organizations surveyed do not use any ERP or CRM in their organization. The ERP/CRM most used are ERP Primavera, F3M and Sage. As for the knowledge of the managers of social organizations about ERP CRM, the most referenced were: Sage, followed by ERP Primavera, SAP, FM3 and Oracle. About a quarter (26.1%) of the managers who answered the questionnaire did not know any ERP/CRM.

In relation to programs/awards related to social entrepreneurship, 65% of respondents have never benefited from any program. The program/award that most organizations won was EDP Solidária from Fundação EDP, followed by Bootcamp from Instituto de Empreendedorismo Social. Only 36% of the awards/programs won by social organizations were related to or allowed the use of information technologies. The award that most helped organizations with information technologies was EDP Solidária.

Regarding the second part of the questionnaire, in which the objective was to understand the perception of social organizations on the benefits of information technologies, the organizations were unanimous in stating that they agreed that, in the future, their organizations could benefit from the use of some information technology. However, only 60% respondents responded positively to the intention to implement some information technology in their organizations in the future, 20% responded neutrally and 20% have very little or no intention to implement IT.

This fact points to the importance of strengthening the information and awareness of managers of social organizations about the importance of investing time and resources in this specific area, since the integration of technologies is recognized as beneficial, but it is not a clear and immediate intention on the majority part.

The predominance of the female gender in the management of social organizations, less linked to technologies, the age of managers who, in the great majority, are not digital natives, the scarcity of resources and the lack of existing opportunities for the social area are possible factors explaining this circumstance.

As for the main tasks that could benefit from information technologies, the most mentioned was management, which corresponds to the most prevalent task in daily life, as it is very comprehensive, followed by measurement of results, accounting management and employee management. The tasks that managers believe do not have

Table 35.1 Information technologies to support social entrepreneurship

	ERP	CRM	BI	DM	Specific Applications
		▓		▓	▓
Fundraising	▓	▓		▓	▓
Funders / Sponsors Management	▓				
Membership Management		▓			▓
Treasury Management	▓				▓
Volunteer Management		▓			▓
Training Management					▓
Accounting Management	▓				
Route Management				▓	▓
Strategic management			▓		
Measurement of Results	▓				
Employee Management					▓

as many benefits from the introduction of information technologies are route management and customer acquisition (which can be justified since not all organizations have these tasks).

Table 35.1 elaborated against the results of the questionnaire, identifies the applicability of information technologies, ERP/CRM, BI, DM and specific applications in the various activities already listed above.

35.5.1   Proposal and Recommendations

Regarding the technologies identified in Table 35.1, it is recommended:

- ERP, to be implemented in entities with relevant fundraising, customer acquisition, partner management and volunteer management processes;
- BI, to be implemented in strategic management: this is a big gap in the structures of social organizations that, when they find themselves overloaded with daily tasks, end up neglecting strategic planning; the implementation of BI will bring relevant data and information collection processes that allow a better evaluation of the processes and results, adjustment of processes, priorities redefinition and increase in the efficiency of the organization;
- DM, applied to the tasks of fundraising, client acquisition and route management; in this case, organizations must have systematic and efficient data collection processes: this condition presupposes, from the outset, an evolution in relation to the processes of the entities of the social sector and requires an initial effort that, a posteriori, will be rewarded;
- Specific applications existing in the market for client acquisition, fundraising, partner management, treasury management, volunteer management, training management, route management, employee management are implemented in different social organizations;
- Likewise and in relation to the various initiatives and projects dedicated to the development of information technologies that social economy organizations can use and benefit from, which generally exist in the form of tenders or which require more or less complex application processes, we recommend if the following opportunities are considered;
- Awards related to information technologies such as ScaleUp Porto;
- Awards and training programs for the social economy, such as the Community Fidelity Prize—Support for sustainability in which the prize aims to support initiatives that contribute to the strengthening of the social sector in Portugal, through initiatives aimed at strengthening the activity/capacity for intervention of the institution (such as, for example, in the areas of human resource management or processes, marketing, communication, training or certification or billing systems, computerization, among others), initiatives that promote an increase in the capacity for intervention of the institution (whether by attracting new resources, investing in marketing and communication areas or creating models for expanding the institution's work, among others) or allowing the diversification of the respective contribution to the strengthening of the social sector in Portugal (either by defining a development strategy, for the definition of a replicability model or for the investment to launch social businesses, among others);
- Training Program for the Social Economy of Portugal Social Innovation that aims to support Entrepreneurship and Social Innovation Initiatives (IES) in strengthening their organizational skills and management skills, with the aim of making them more prepared to generate social impact and capture social investment. This program may include up to five different interventions in the following areas: value

creation model; impact assessment; strategy, partnerships and growth; marketing, communication and fundraising; structure, governance, leadership and human resources; financial management, control and risk; operations management and information technology;

- Initiatives to help social organizations such as TechSoup—international non-profit network of non-governmental organizations that provides technical support and technological tools to other non-profit entities. Through the website, it is possible to obtain software with a special price for non-profit organizations, Microsoft for non-profit—Microsoft's international program to support social organizations, through donations and/or discounts on its products such as Microsoft Office 365, Power BI, Azure, Donate IT—community of volunteers specialized in the most diverse areas of information systems management who are willing to contribute to the improvement of information management, processes and electronic dematerialization of non-governmental and/or non-profit organizations;
- Through the corporate social responsibility area, means and resources are offered for third sector organizations to develop their projects in the IT areas, and some of the companies that have already contributed were Deloitte, EY, Your, Everis, Prime IT group, among many others.

It is also suggested the multiplication of actions and awareness campaigns to recognize the advantages and increase the intention to implement IT in the processes of the other entities (40%) who, in the questionnaire, expressed little or no intention to integrate them.

The advantages and benefits of using IT in all production processes and generating value for society are universally accepted and recognized. Resistance to implementation and its use is usually related to a lack of information, scarcity of resources to make the necessary investment, as well as the initial effort required to train employees and reorganize processes. However, with technological developments taking place, it is inevitable that technology will penetrate all sectors of society, and, in this sense, the social organizations that lead will have an advantage over the rest.

35.6   Conclusion

This study was dedicated to investigating the use of IT by social organizations and proposing a rational use of a set of technologies, with a view to making their action more effective, expanding the number of beneficiaries and increasing the impact generated.

The predominant area of activity in the organizations studied is action and social security, and, in geographic terms, most of the activities promoted by the organizations studied occur in the metropolitan area of Lisbon, North and Center.

The most common day-to-day tasks of these organizations are the management and employees management. Most entities already use some type of software for

their execution, Excel and ERP; however, more than a quarter of the studied entities claim not to use any type of software.

Information technologies can help improve the performance of different social organizations. Its leaders are unanimous in recognizing the importance of information technologies and the benefits for the functioning of organizations. Both the introduction of an ERP/CRM, which would benefit the task of management of the organizations, and the adoption of web/mobile applications, are perceived as beneficial by the entities.

Most of the organizations that participated in the study (60%) responded positively to the intention to implement some information technology in their organizations in the future. However, it would be expected that the totality would manifest this intention, due to the fact that all leaders recognize the advantages of its introduction. This fact deserves attention, as there is an unequivocal need to support social organizations in technological innovation, aiming at greater efficiency in their actions. This challenge can be framed, for example, in programs in the area of social responsibility of companies linked to IT. Although they already happen, actions of this nature deserve to be reinforced, this because of the capacity that IT companies have to add value to social organizations and that they will return to society through the services provided in support and in solving social problems.

To contribute to the challenge of strengthening IT in social organizations, a table was created to identify the information technologies that help to meet the needs of organizations and to better respond to the challenges they face in their daily lives. This table is a simple and useful tool that allows organizations to improve their processes, through the implementation of current, efficient and intelligent resources, and in accordance with the recommendations made.

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Chapter 36
Challenges of Measuring Social Media Advertising

Tihomir Vranesevic and Tajana Marusic

Abstract In the pre-social media era, the return on investment in advertising and the impact on sales was primarily monitored through the financial aspect. Brand owners measured how much was invested and in how much sales such an investment resulted in. Social media has brought new parameters that are monitored in advertising. States that measuring key performance indicators on social media are measuring how much value is created through investments in social networks (Buryan, M.: Social Media ROI: Why Measuring It Is Critical for Your Business, last accessed 2020–05–06 at https://www.socialbakers.com/blog/2745-social-media-roi-why-measuring-it-is-critical-for-your-business (2018)). Businesses are trying to use social media as efficiently as possible. On the one hand, social media and social networks are easily accessible and easy to use, and on the other hand, it is not easy to analyze and evaluate the activities that brands carry out on social networks. It is not enough to assess the value of consumers on social networks solely by their transactions that result in purchases, but it is also crucial to measure consumer engagement, in addition to the challenges of measuring the effect of advertising on social media (Kumar et al. in J. Serv. Res. 13:297–310, 2010). The aim of this paper was also to examine what consumers think about advertising of brands through social media by conducting a survey of a representative sample ($n = 1000$). The research was conducted in Croatia through a structured survey questionnaire where the participants were asked following questions: How often do they open ads they notice on social media? How important is it for them if a brand is present on social media, and how does brand advertising influences their purchasing decision. The survey was conducted to gain insight into real consumer opinions and whether it is justified for companies to invest in social media advertising.

T. Vranesevic (✉)
Faculty of Economic and Business, University of Zagreb, Zagreb, Croatia
e-mail: tvranesevic@efzg.hr

T. Marusic
University North, Koprivnica, Croatia

36.1 Introduction

The global popularity and reach of social media has enabled consumers to greatly influence the success of brands through their preferences and by sharing personal experiences through word of mouth, but also to have an effect on how companies invest in social media advertising. Social media can be defined as a computer-based communication tool through which individuals can create, share or modify information, ideas, interests, images or videos in virtual communities and through social networks [1]. In the near future, social media will primarily depend on mobile technology and capabilities of the Internet to create interactive platforms through which consumers communicate, create, modify and share content they have created themselves.

Although social media does not differ significantly from traditional communication media, it can still be argued that they provide better quality, reach, frequency of use, with the same durability: Communication on social networks remains stored forever and can never be completely deleted. Many companies typically use social media to promote brands, new products and services and communication with the consumers and that is why it is important to organize monitoring of brand-related content on social media and social networks and measure its impact [1]. Traditional marketing campaigns are going through a change, and more and more companies are investing in social media to promote brands through digital content [2].

Measuring key performance indicators on social media involves measuring how much value is created through investments in social networks [3]. Value is mostly measured in the monetary value (money) that companies invest in social networks, but also in non-monetary value through comments or subscribing to the newsletter. There is a trend of increasing investment in advertising on social networks and social media, and 80% of the most successful companies in America have corporate profiles on Facebook [4].

Content generated by brands, such as articles, videos, photos, is added daily through company profiles in order to encourage consumers to follow, comment or buy these brands. Furthermore, what is interesting is that the same successful companies, through a conducted research, "admitted" that they cannot claim with certainty in what way advertising on social media creates new consumers [5]. In the age of social media, companies should not only focus on the money they spend on social media advertising, but that the return on investment should be viewed through consumer reactions and how consumers interact with brands [2]. This approach takes into account not only short-term goals such as monthly performance, but also that investing in social media should be a long-term goal. Brands need to think about why consumers visit a blog or brand profile and what kind of behavior they exhibit when participating in profile commenting (e.g., commenting on the performance of a particular product) and how this can be linked to a company's marketing. The conclusion is that investments in social media and networks are not always measurable in money but should also be observed through consumer behavior and decisions

based on the available content on brand profiles via social media and this should be observed over a longer period of time.

36.2   Theoretical Framework

It is not enough to assess the value of consumers on social networks solely by their transactions that result in purchases, but it is also crucial to measure consumer engagement [6]. They state how consumers contribute to brands and businesses in a variety of ways that go beyond measurable monetary benefits, such as word of mouth, or ideas for new products, and that it is crucial that consumers are not underestimated or overestimated. Businesses are increasingly realizing that consumer participation is the key to the strategic mindset and success of brands on social media. Consumer engagement can be viewed through four basic dimensions: (1) consumer behavior in shopping, (2) consumer behavior related to the creation of new consumers, (3) consumer behavior through influencing other consumers by word of mouth (WOM); (4) consumer behavior through the feedback they give to businesses regarding their brands and products [6].

Customer purchasing behavior implies a repeat purchase or additional purchase through different types of sales (customer lifetime value—CLV), which is the current value of future profits generated by consumers during their lives and related to the services of a particular company. Consumer behavior is related to the creation of new consumers (customer referral)—a component based on maximizing the value of the consumer base and how much each consumer is valuable in the context of the recommendation he gives to other consumers about the brand. Existing consumers are rewarded for it by the company. It serves to assist marketing professionals in designing marketing activities in the present to achieve return on investment and profitability in the future.

Consumer behaviour through influencing other consumers using word of mouth implies that influental consumer by sharing its experiences or opinions has an impact on other consumers and their purchasing decision.

The modern consumer is informed, networked with other consumers, empowered by the influence and reach of social networks and media, and together with companies is an active creator of the successful brands and products. In the environment of social media and networks, consumers provide added value to companies by providing direct insight into consumer preferences and needs. The feedback that consumers provide to companies is not only important for the creation of new products and services but is also extremely important for the continuous improvement of the quality of the products and services that the company can provide to the market and thus for the improvement of the value of the company´s brand. Consumers can create value for businesses in a variety of ways. Consumer participation is fundamentally behavioral and that it transcends transactions. It is aimed directly toward the brand and the company. In measuring key performance indicators, we can distinguish two types of indicators [7].

Quantitative indicators such as the number of followers, consumer engagement, content sharing, the time consumers spend on a brand profile or post, and the traffic itself through a brand profile (click per rate).

On the other hand, qualitative indicators are more based on observations such as influence; who is the person of influence (influencer) for a certain brand and how to detect it; how to measure interaction among consumers (sentiment); what are the drivers of conversation among consumers.

Since social media provides numerous opportunities for brands, they are trying to use social media more efficiently. On the one hand, social media and social networks are easily accessible and easy to use, and on the other hand, it is not easy to analyze and evaluate the activities that brands carry out on social networks. There is a need for parameters that can be measured through social media. A basis for further discussion on the need for more unified parameters that are used to measure the effectiveness of social media advertising is necessary. The biggest challenge of effective social media analytics is not in the lack of parameters to be measured but in the structure that would make them useful for businesses [8].

This key performance indicators (KPIs) can be categorized into six key categories; (1) customer experience, (2) customer interaction, (3) customer categorized activation, (4) customer satisfaction, (4) customer satisfaction, (5) reach and (6) finance (see Fig. 36.1.

(1) User experience can be measurable through several different measures such as total number of positive, neutral and negative statements on a particular topic or to be more exact through a type of feeling. It can be also measured through the ratio of positive or negative or neutral comments compared to the total number of comments on a particular topic. The user experience can also be measured as a percentage of how often a particular topic is mentioned in the relevant segment allowing for early identification of trends. It is calculated by dividing the total number of mentions of a particular topic by the total number of comments mentioned through the relevant segment. Impact of the idea acceptance / enthusiasm by the consumer regarding a certain topic or idea is also an important part

Fig. 36.1 Categories needed to measure the impact of advertising within social media. *Source* [8]

of the understanding the customer experience. It is calculated by dividing all positive comments by the total comments (customer experience).

(2) Customer interaction must be focused on communication between the company and the consumer or the communication between consumers themselves. Communication between a company and consumers can contain valuable insight into how consumers see the brand, what they think about the products and services the company offers, as well as about the company itself. If the consumer can identify with the qualities that the company has, it is more likely that they will feel greater brand loyalty. In this case, interaction with consumers as a measure of success is divided into several different segments such as: topics of conversation where reactions such as responses, "likes", shared posts, related to a particular topic are measured; volume of conversation is the number of answers to a certain topic; participation is an assessment of how much consumers are interested in a particular topic related to the brand; engagement is the proportion of users who actively participate in a marketing campaign by commenting, sharing or forwarding content about the brand; chat reach means the reach of the dialogue, which is the proportion of users participating in the conversation divided by the number of total users who viewed the content; interaction rate—represents the percentage of users who access ("open") the content and choose to interact with the selected content.

(3) Customer activation—as a measure of success is the change of electronic oral delivery (eWOM) or digital oral delivery (dWOM). People are considered to be more inclined toward appreciating experiences and comments by individuals who they perceive as equals or to who they are connected by a common interest. This measure is divided into several segments: Active advocates represent the number of users who have actively advocated for the benefits of the brand or products from the brand range in a certain period of time; advocate level of influence measures how much one brand advocate's post affects other users; influence of brand advocates specifies the impact of active advocates on other advocates by dividing the number of conversations initiated by the advocate by the total amount of all advocate conversations.

(4) Customer satisfaction is considered a key determinant in consumer loyalty that can affect the economic success of the company and also contains several segments: Problem solving rate assesses the effectiveness of the use of social media by consumers in case of problems with the use of the product/service. Satisfactory customer service responses are shared with the total number of customer service requests; troubleshooting time that shows the effectiveness of using social media in solving user problems. The total time required to respond to a problem is divided by the total number of consumer requests; satisfaction score represents the percentage of consumers who gave a certain rating to the content (positive, negative or neutral). The consumer rating is divided by the total number of user ratings; service level measures the effectiveness of customer service through social media. Resolved inquiries are divided by the total number of open inquiries by consumers.

(5) Finance as an indicator of success also consists of three measures: Average cost per visitor includes the cost per consumer received and includes payments for banner advertising, TV advertising, etc. The total marketing costs are divided by the number of visitors to the post. Average cost per visit is the total marketing cost divided by the number of visits. Average revenue per user is revenue generated is divided by the number of visitors to the post.

(6) Reach represents different measures about how many potential users can be reached using a particular social media channel; share of voice represents when own brand references are shared with all references of other brands in a defined competitive environment; unique contributors are the total number of users who contribute to content. Reach as a measure assesses potential target audience.

Communication between brands and consumers through social media and social networks can take place in two ways, depending on the communication goals of the brand. There is a large number of different metrics concerning social media and brand managers need to understand the subject very well to know what they want to measure. Given that the amount of information that is measured or can be measured is overwhelming it is no wonder that this segment of measurement and reporting is often left to marketing agencies specializing in digital communication. However, due to the large amount of information, it is necessary to define what the primary goals of social media communication with the consumers are. For this purpose, communication could be differentiated depending on the goal of communication that the brand wants to achieve. It can be sales-oriented communication where the main goal is for the customer to click on a certain link (e.g., an ad that leads to a Web shop of a certain brand) or for the purpose of encouraging consumer engagement where the goal is to initiate communication among consumers, to express their opinions, views on the brand and its products and services.

The effect of sales-oriented communication can be clearly measured. Click through rate (CTR) is a long-established measure that shows how often individuals click on a particular ad, link or e-mail. CTR is important for predicting consumer interest in a product in general or in individual brands, and their behavior when making a purchase [9]. This measure was used in measuring online advertising even before social media became so popular. The rise of social media has enabled the placement of ads through other media, such as social networks, platforms, applications in relation to previous Web sites, forums and blogs. Today's advances in technology have made it possible to develop a variety of software that allows brand managers to track how much a particular ad has "brought" customers to the Web shop. For now, it is not possible to measure how many consumers who saw the ad through social media or social networks came to the physical point of sale (stores). Certain social networks, such as Facebook and Instagram or Google, have built-in software that allows business users (the profile must be registered) to provide "ready-made" statistics regarding the number of users viewing posts and searching the profile. Cost per click (CPC) is a measure of how much an advertiser is willing to pay when an individual clicks on an ad on social media. CPC (hr. Cost per click) enables owners of social networks (Facebook, Instagram, Twitter, Youtube) or search engines (Google)

to allow advertisers to launch and broadcast their own ads [10]. Each time a visitor clicks on the specified ad, the advertiser has to pay a certain (agreed) amount to the owner and hence the name cost per click. On the other hand, in communication aimed at encouraging consumer participation in brand communication (engagement), the elements that are most monitored by agencies and companies themselves are: number of positive reactions of consumers to the publication of the brand ("likes"),how many times the post has been "shared" by consumers, how many comments a particular brand-related post "received" from users. In order for brands to be able to define what they want to track from communication with the consumers on social media, they must clearly define what the goals they want to achieve by communicating on social media are. Taking this into account, it is possible to propose a model for identifying brand communication to consumers on social networks, which has two basic dimensions: sales-oriented communication and encouraging consumer participation (engagement) (see Fig. 36.2).

Measuring the effectiveness of communication and advertising of brands on social media and networks certainly needs further research, mainly due to the complexity of the issue itself. Services and what exactly can be monitored and measured on social media are constantly changing and upgrading mostly under the influence of brand managers and brand owners, as well as their need for the optimization of communication with consumers. By increasing the possibility of everything that can be measured in consumer-brand communication, the "appetite" of brands continuously grows, changing the parameters of what is measured in social media communication.
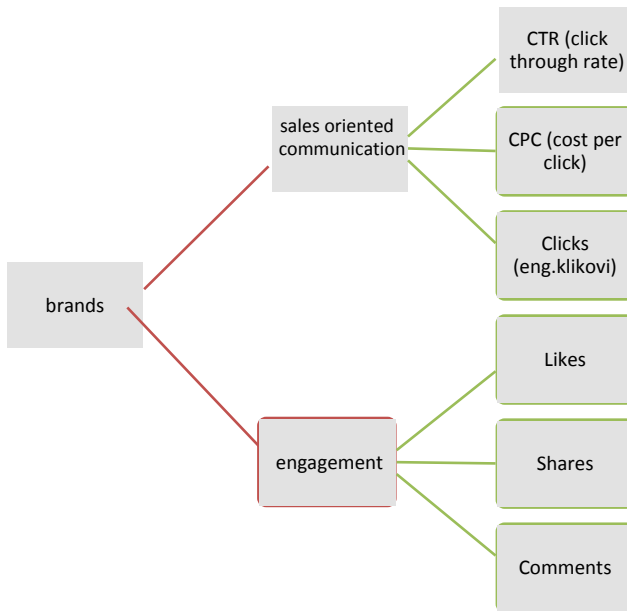
Fig. 36.2 Brand-consumers communication on social networks. *Source* Authors

36.3   Results and Analysis

In order to determine what consumers think about brands advertising on social media, research was conducted in order to find out how often people open ads that they notice on social media; how important it is for them that the brand is present on social media and how brand advertising influences their decision to buy a brand. Purpose of the research was to gain insight into real consumer opinions and whether it is justified for companies to invest in social media advertising. The survey was conducted in late February and early March 2020 (before the Covid-19 crisis) in the Republic of Croatia.

36.3.1   Methodology

The research was conducted in the Republic of Croatia on a representative sample of 1000 respondents, with 50.5% of respondents being men and 49.5% women. Considering other specific characteristics of the sample such as employment, 60% of respondents were employed full-time, 11% of respondents were retired, 14.4% were students, 7.4% were unemployed, and 2.8% were housewives; by age: 42.3% of respondents were 16–34 yr old, 34.5% were 35–49 yr old, and 23.2% were 50 yr old or over; according to education: 53.4% of respondents have a university degree, while 46.6% of respondents have a high school education. The survey was conducted through a telephone survey (CATI) by a respectable marketing agency in Croatia in late February and the first half of March 2020.

36.3.2   Results

When asked how often they open ads they notice on social media, there were seven possible answers: more than five times a day; 4–5 times a day; 1–3 times a week; several times a week; rarely; I do not notice ads at all; I notice ads, but I do not open them. 10.4% of respondents claimed that they do not open ads even though they notice them (see Fig. 36.3).

A quarter of the total number of respondents (26% of them) answered that they open ads on social networks few times a week, and 25% of respondents answered that they open less than that, 18% of respondents answered that they open ads 1–3 times a day, while 10% of respondents answered that they notice ads but never open them.

According to the characteristics, there are no significant differences, but it can be noticed that younger respondents open ads on social media more often than older ones, because if you look at collective answers (1–3 times a day, 4 to 5 times a day, more than 5 times a day), then it makes 36.2% of respondents aged 16–29 yr old and
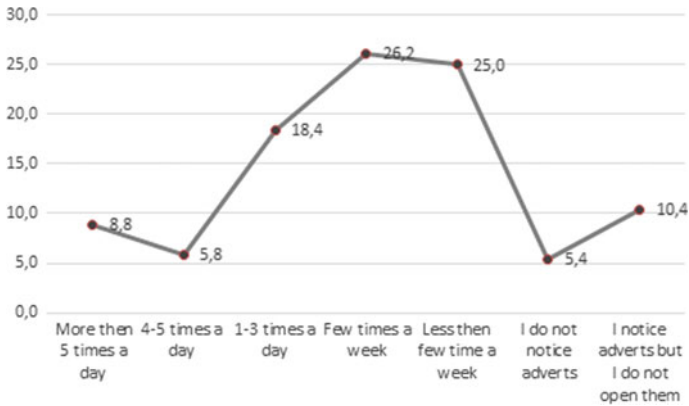
Fig. 36.3 How often do you open adverts you notice on social media? *Source* Authors

31.8% of those aged 30 and over. For more than half of the respondents (55.7%), it is important that brands are advertised on social media (see Fig. 36.4).

Advertising brands on social networks is important for the minority—16.3% of respondents answered that advertising on social networks is irrelevant for them, 28% answered that they do neither consider advertising brands on social networks relevant nor irrelevant, and 55.7% responded that they believe that social media advertising is important for brands. According to the observed characteristics, there are no significant differences.

When observing how brand advertising through social media affects purchasing decision, then it is seen that there is almost the same share of respondents who think it is negative (10.2% of respondents think so) or that it does not affect their purchase decision as stated by 14.5% of respondents who participated in the study (see Fig. 36.5.)
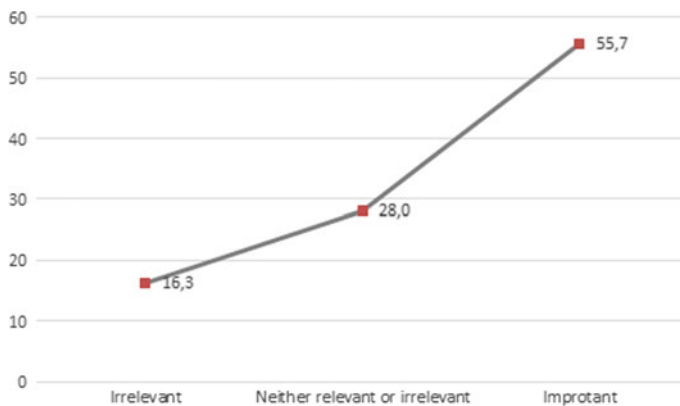
Fig. 36.4 In your opinion, how relevant is it for brands to advertise on social media? *Source* Authors
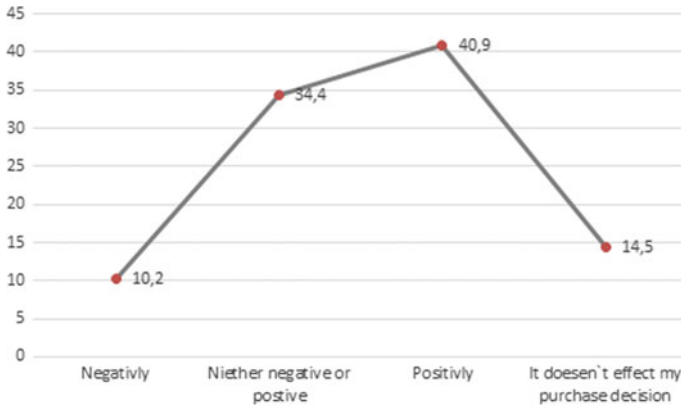
Fig. 36.5 How brand advertising through social media affects your purchasing decision? *Source* Authors

While 10.2% of respondents stated that brand advertising on social networks negatively influences their purchasing decisions, 34.4% stated that it neither influences nor influences. In addition, 40.9% answered that it positively influences their purchasing decision, while 14.5% responded that it does not affect their purchase decision at all.

It is extremely interesting to note that there are no significant differences in the attitudes of respondents about this and it can be argued that the results are indicative for the vast majority of respondents—this is a sample of respondents representing the Croatian population with 95% confidence and possible deviations of $\pm 3\%$.

36.3.3 Research Limitations

Although the sample of respondents was significant in number ($n = 1000$) and representative of the structure of respondents by gender, age and education, it is necessary to investigate in more detail why if the respondents believe that advertising is important for the brand, and that it positively influences their purchasing decisions, why do most respondents only open/watch ads only a couple of times a week.

It is necessary to investigate in more detail what are the primary reasons for consumers to open and watch ads (interest, visual aspect, striking slogan, music…) through social media. All of this is important in order to detect a most appropriate approach to measuring social media advertising. Furthermore, as a limitation, it can be stated that the research was conducted before the Covid-19 crisis and that it is possible that the research in the post-Covid-19 crisis would give significantly different results.

36.4 Conclusion

The survey showed that 55.7% of respondents believe that brand advertising on social networks is important, while 40.9% of respondents answered that brand advertising has a positive effect on their purchasing decisions. These findings can be a good indicator to brand managers that investing in brand advertising on social networks is justified and has a positive effect on consumers.

On the other hand, it is necessary to continue further research in the direction of the parameters that are considered when defining the return on investment in advertising on social media. The field of measuring the effectiveness of communication and brand advertising on social media and networks certainly needs further research, mainly due to the complexity of the topic itself. Services and what exactly can be monitored and measured on social media are constantly changing and upgrading mostly under the influence of brands (companies) and their needs in order to optimize communication with consumers. By increasing the possibility that everything can be measured in consumer-brand communication on social media, brands are continuously exploring possibilities of social media metrics in order to achieve better operationalization and effective management. Appropriate measurement metrics are particularly significant because it can give a better insight into consumer attitudes as well as their behavior. For example, it will be interesting to explore how the current Covid-19 crisis is affecting consumer preferences and in what way are they different than in the pre-crisis period.

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Chapter 37
Influencer Marketing: How Social Presence Affects Followers' Intentions

Sergio Barta, Marta Flavián, and Raquel Gurrea

Abstract The emergence and adoption of new technologies are deeply changing society, providing new forms of communication. This development has allowed the growth of different social networks such as Instagram, YouTube or Twitter. The rise of these social networks, particularly Instagram, has led to the emergence of influential figures in their follower's opinion, commonly called influencers. To date, scarce research analyses the role of the context's particularities where the communication takes place, and fewer studies have examined the differences between traditional social networks and virtual environments. To analyse the differences in perceptions and behavioural intentions of the followers, an experimental design was proposed between two scenarios (live on Instagram vs. live in a virtual room). The results show that the greater social presence provided by virtual rooms encourages influencer's trustworthiness. The research highlights the opportunities that new technologies provide for communication between people.

37.1 Introduction

The new Information and Communication Technologies (ICT) provide new forms of communication [1]. This fact has allowed the emergence of different social networks, in which the number of influencers has been growing. These influencers are important sources of information for their followers and even influence their behaviour. In fact, given the confidence and credibility they may convey, research has shown that they are capable of influencing more than other traditional media, such as brand ads [2].

S. Barta (✉) · M. Flavián · R. Gurrea
Faculty of Economy and Business, University of Zaragoza (Spain), Gran Vía 2, 50005 Zaragoza, Spain
e-mail: sbarta@unizar.es

M. Flavián
e-mail: mflavian@unizar.es

R. Gurrea
e-mail: gurrea@unizar.es

To achieve these influences, the identification with the influencer or the perceived credibility has been demonstrated to be key [3, 4]. Recent research has also focused on different aspects of the account content. Academic literature has analysed the posts' characteristics that are important to achieve greater effectiveness and the account's characteristics, such as the number of followers [5, 6]. However, scarce research analyses the role played by the platform where communication takes place.

Considering social presence as the capability to convey a sense of human warmth and sociability [7], the characteristics of the platforms may provide differences in the degree of social presence. In virtual rooms, users share the same virtual space and can interact with each other. Furthermore, they can ask questions and make comments by voice, as opposed to a live in Instagram, where they can only write them in chat. Research on social psychological distance suggests that individuals have a better attitude towards other individuals who are perceived to be closer to them [8]. Thus, contexts that encourage a greater social presence may affect the influencers' trustworthiness.

Therefore, this research aims to examine the effect that the platform has on the message communicated. Virtual spaces allow greater proximity to influencers, so we analyse if the greater social presence this implies affects the attitude towards influencer in terms of trustworthiness. Likewise, based on this greater trust generated, we explore the mechanisms that lead to the purchase or recommendation of the products shown.

Consequently, the contribution of this research is twofold. It provides knowledge to the literature on social presence. This research analyses the role that the social presence has in the effectiveness of the influencers' communications. Moreover, it also has valuable practical contributions. This study highlights the potential of alternative online platforms to those widely used for communication between influencers and their followers.

37.2 Research Framework

37.2.1 Influencers

The growing importance of the opinions transmitted in social networks and the growing influence that some people exert on others has motivated some people to devote themselves to offer their opinion through social networks. To define these persons, terms such as influencer have been coined. While this term is very popular in the context of social networks, academic definitions of it are relatively scarce [9].

Some authors consider influencers as a particular type of micro-celebrity [10] or self-made micro-celebrities [11]. Social media influencers, like celebrities, also use their ability to influence their followers to make suggestions or recommendations about products or services available on the market. While there are some similarities between influencers and celebrities, they are also different concepts [9].

The influencers have become known thanks to the social media that have allowed them to spread their points of view and opinions. As a result, they have been able to create a personal brand that attracts and engages a large number of followers [12]. In this research, when speaking of an influencer we will take as a reference the definition offered by Dhanesh and Duthler [9]. We will consider that a social media influencer is a person who, through a personal brand, builds and maintains relationships with multiple followers in social media, and can inform, entertain and potentially influence the thoughts, attitudes and behaviours of his followers.

The great impact that these influencers have on society has caused many brands to collaborate with them to obtain benefits. Some benefits that brands obtain are a greater brand's knowledge, better attitudes towards the brand or a greater intention to buy their products [13]. To make an effective influencer campaign, aspects related to the content of posts have already been examined, such as the visual congruence [14] and the placement of products, finding better results for the brand when the posts contained both the influencer and the brand than the product only [6].

37.2.2 Social Presence

Different conceptualizations of social presence have been addressed. It has been defined as the degree to which a medium allows users to experience that others are psychologically present [15]. Other academics associate this concept with the richness of information, while another part of the literature focuses on the psychological connection. In this perspective, a medium is perceived with a high degree of social presence if it conveys feelings of close human contact and sociability [7]. This research aims to understand the impact of closeness and the greater possibilities of interaction that virtual rooms allow, so we adopted this last approach.

Originally, the social presence theory was proposed in the information systems field, having been identified as a crucial element of the user's experience in the media [16]. Later, this theory was also proposed in research related to education or e-commerce. In the educational context, the social presence has a positive effect on both learning and satisfaction of students in online courses [17]. In e-commerce, social presence brings benefits such as a greater purchase intention [18].

Technological advances have increasingly enabled technologies to convey social presence, simulating both the appearance and behaviour of human beings by integrating avatars, voice and gestures. Similar to new forms of communication that emerged in the past, now, it is necessary to understand how the perception of social presence impacts on the new forms of media. Virtual environments are computer-generated 3D spaces with unique possibilities for communication activities. The spatial characteristics of these environments simulate physical proximity, which encourages interaction by allowing users to perform activities with their virtual bodies, usually avatars [19].
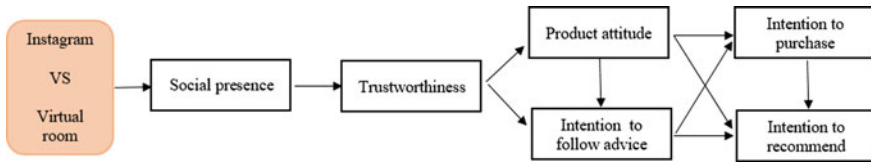
Fig. 37.1 Research model

37.2.3 Hypotheses Development

The hypotheses will be developed below. The proposed model can be seen in Fig. 37.1.

Virtual environments have features that may influence the perception of social presence. Virtual interaction with other humans can lead to a feeling of human warmth and sociability related to social presence. Apart from this interaction, other aspects such as the possibility of two-way communication by voice lead to a greater degree of social presence [20]. In this sense, in directs of today's social networks such as Instagram, only the influencer usually communicates by voice, unlike his or her followers, who write comments or ask questions using the chat. For these reasons, we propose that:

H1: Virtual rooms generate a higher perception of social presence than a direct on Instagram.

People trust more to those who share their interests more, perceiving them closer to their way of being [8]. Better attitudes are generated towards people who are close to us or with whom we are sharing the same physical space [21]. Considering that the sensation of presence brings you closer to the other person, even in a virtual environment, followers will trust the influencer more when they perceive a high degree of social presence, in a similar way that occurs in other contexts such as e-commerce [7].

H2: The social presence positively influences the influencer's trustworthiness.

Attitudes are formed from beliefs or thoughts and can be influenced by external sources of information [22]. The trust towards a person conditions the credibility of the messages he or she conveys [23]. Therefore, this trust will affect the attitude towards an object shaped by the information received. Trustworthiness towards a person who advises particular products does not only affect the evaluation of the products, but also influences the behaviour directly [24]. So, the recommendations that a reliable influencer gives the followers will condition their future behaviour to a greater extent than if the same recommendations were given by an influencer, they do not trust.

H3: The influencer's trustworthiness positively influences the (a) attitude towards a product and (b) the intention to follow the influencer's advice.

When consumer evaluates different alternatives, cognitive, affective and conative factors are involved [25]. In this way, cognitive aspects such as beliefs are considered to influence affective aspects (e.g. attitudes towards the product), and these in

turn influence conative aspects (e.g. behavioural intentions). The concept of attitude refers to an affective-evaluative predisposition to respond favourably or unfavourably towards an object [26]. Behavioural intentions were described as an affirmed likelihood to adopt a specific behaviour [27]. The previous studies have widely dealt with the influence that consumer attitudes exert on their behavioural intentions. For example, consumers' positive attitudes towards a product influence behavioural intentions, such as the intention to purchase, or the intention to recommend the product to other consumers [28].

More specifically, when consumer behaviour is reasoned, attitudes towards products are generated [29]. These attitudes will guide the consumer's behaviour in a future purchase decision without additional limitations (e.g. lack of budget). Applied to our research context, it is expected that consumer's attitude will guide subsequent consumer's intentions in different stages of the purchasing decision process, namely intention to purchase, recommend the product to other consumers and follow the advice. Thus:

H4: The attitude of the follower towards a product recommended by the influencer positively influences his or her intentions to (a) buy the product, (b) recommend the product, and (c) follow the influencer's advice.

Influencers have an important number of followers because they offer advice and recommendations of special interest to their followers [30]. If an influencer offers advice that involves purchasing a product and the follower considers it a good idea to follow it, this will be the right arena to develop the intention to purchase that product and to recommend it to others to obtain the benefits of following the advice as well.

H5: The intention to follow the advice will favourably influence the intention of the follower: (a) to buy the product and (b) to recommend the product.

The intention to purchase a product and the intention to recommend that product are two behavioural intentions that involve taking a positive approach to the product [31]. It seems reasonable that the positive emotions that motivate the purchase intention in the follower motivate the follower to recommend the purchase of the product.

H6: The follower's intention to purchase the product recommended by the influencer will positively influence the intention to recommend that product.

37.3 Methodology

Data were collected in a field experiment. The participants were followers of a professional cyclist's Instagram profile ($n = 99$; 91.9% male; mean age $= 29.78$).

In the first experimental group ($n = 58$), the influencer performed a direct on Instagram. He showed the sports equipment that he uses to ride on bike. He also gave advice and recommendations for the choice of material. Then, he answered questions from the followers, and finally, the assistants were invited to complete an online questionnaire.

A virtual room in Mozilla Hubs was designed for the second experimental group. To join the room, participants were required to register in advance. Since on this platform it is not recommended to join more than 24 users in the same room, participants were divided into three rooms. The information communicated during the Instagram live was replicated while photographs of the products were shown. At the end, participants could ask questions and they were invited to answer a questionnaire. 43 participants responded; two of them were eliminated because they reported sound problems.

A sample of 99 participants was finally obtained, exceeding the recommended values [32]. From these 41 participants, eight had attended the Instagram live performed. Consequently, the experiment has a mixed design. Mixed designs combine the advantages of the between-subjects designs and the within-subjects designs [33].

The online questionnaire included questions related to the control variables: product involvement, relationship with the influencer account (if he/she was a follower less than a month ago) and the relationship with cycling (if he/she rides on bike or not). To ensure that participants had attended and paid attention, participants indicated at the beginning which products and in what order the influencer had been talked. The variables under study were adapted from the prior literature. Social presence was adapted from Lu et al. [34], trustworthiness [35], product attitude [36], intention to follow advice and intention to recommend [2], intention to purchase [37] and product involvement [38].

37.4   Analysis and Results

The scales were validated in two steps through exploratory and confirmatory factor analysis [39, 40], using the statistical software SPSS and Partial Least Squares (PLS) respectively. All variable items had higher loads than the recommended benchmark of 0.7 [41]. The Cronbach alphas were higher than 0.7, and the composite reliabilities exceeded 0.65 [42]. The Average Variance Extracted (AVE) was higher than 0.5, which proved convergent validity [39]. Discriminant validity was tested using the Heterotrait–Monotrait ratio (HTMT), resulting in values below 0.85 for all variables [43].

Once the scales were validated, the average of the items was calculated to create the measures used in the analyses. To confirm whether the virtual scenario is perceived to have a higher degree of social presence, we carried out a T-test for independent samples. This test supports this fact ($F_{2,97} = 12.195$; $p < 0.001$), supporting H1.

The PROCESS macro v3.5 for SPSS [44] was used to test the mediating effects proposed in H2, H3a,b, H4a,b,c, H5a,b and H6. We ran a causal path model (model 6) to analyse the mediating effects of trustworthiness, product attitude, intention to follow advice and intention to purchase on the intention to recommend. Sequential coding was used to operationalize the bi-categorical independent variable [50]. A dummy variable ($X1$: $0 =$ Instagram, $1 =$ Virtual room) was used to test the model.

Table 37.1 shows the results. Social presence affects influencer's trustworthiness, supporting H2. Influencer's trustworthiness has a significant effect on the product attitude and the intention to follow the advice (H3$_a$ and H3$_b$ supported). The product attitude influences the intention to follow the advice and the intention to purchase the product (H4$_a$ and H4$_c$ supported), but there is no significant effect on the intention to recommend it (H4$_b$ not supported). The effects proposed for the intention to follow the advice on the intention to purchase and to recommend the product have been significant (H5$_a$ and H5$_b$ supported). Finally, the follower's intention to purchase the product will positively influence the intention to recommend that product, supporting H6.

Concerning the control variables, the product involvement has a positive effect on the variables most related to it, such as the product attitude, the intention to purchase it and to recommend it. Cycling affects trustworthiness, product attitude and intention to recommend it. Relationship time with the account affects the purchase intention.

37.5 Discussion and Conclusions

This research shows that influencers' communication in other online environments to those usually used as Instagram or Youtube could also improve their effectiveness. Features of virtual rooms such as the possibility of sharing the same physical space and feeling close to other people through avatars that represent you in the virtual world allow increasing the degree of perceived social presence. This aspect leads to a very valuable aspect in the study context, as it is the credibility towards influencers.

Based on the results obtained, the credibility towards influencer has direct effects on both attitudes and behaviour. This fact once again highlights the relevance of this variable in influencer marketing [4]. Better attitude towards the products leads both to the intention of following the advice and to the intention of buying the products. However, it does not have a direct effect on the intention to recommend them. This fact may be due to the security of the attitude formed. There is an effect from the intention to purchase the product on the intention to recommend that product. Considering that the purchase usually takes place when a consumer is confident that it is the right product, perhaps the greater information provided by the 3D models in the virtual worlds allows strengthening the attitudes formed, being able to imagine the consumer more easily.

Regarding the control variables, we observed some expected effects. The involvement with the product influences the variables most related to the product (product attitude, intention to purchase and intention to recommend), in line with the previous literature [45].

The results obtained in this research provides theoretical contributions. It contributes to the knowledge of research related to influencers, examining the role of social presence. Once two different scenarios in the degree of perceived social presence are proposed, the mechanisms that lead to variables related to the success

Table 37.1 Results of the analysis of the mediation model on intention to recommend

Predictor	Coeff	SE	t	p	LLCI	ULCI
Trustworthiness						
Constant	4.653	0.658	7.065	0.000	3.345	5.960
X1 (Instagram vs virtual room)	0.300	0.127	2.364	0.020	0.048	0.553
Product involvement	−0.023	0.068	−0.344	0.731	−0.159	0.112
Account relationship	0.146	0.158	0.924	0.358	−0.168	0.461
Cycling relationship	0.464	0.203	2.285	0.025	0.061	0.867
Model summary $R^2 = 0.325$; $F_{(4,94)} = 2.768$, $p = 0.032$						
Product attitude						
Constant	1.814	0.767	2.366	0.020	0.291	3.336
X1 (Instagram vs virtual room)	0.239	0.123	1.940	0.055	−0.006	0.484
Trustworthiness	0.299	0.097	3.080	0.003	0.106	0.192
Product involvement	0.147	0.064	2.290	0.024	0.020	0.274
Account relationship	0.041	0.150	0.272	0.786	−0.257	0.338
Cycling relationship	0.522	0.196	2.660	0.009	0.132	0.912
Model summary $R^2 = 0.503$; $F_{(5,93)} = 6.300$, $p < 0.001$						
Intention to follow advice						
Constant	0.346	0.943	0.366	0.715	-1.527	2.218
X1 (Instagram vs virtual room)	−0.238	0.150	−1.586	0.116	−0.536	0.060
Trustworthiness	0.315	0.122	2.590	0.011	0.073	0.557
Product attitude	0.594	0.124	4.796	0.000	0.348	0.840
Product involvement	0.013	0.079	0.162	0.871	−0.144	0.169
Account relationship	0.104	0.179	0.579	0.564	−0.252	0.459
Cycling relationship	0.125	0.243	0.513	0.609	−0.358	0.608
Model summary $R^2 = 0.604$; $F_{(6,92)} = 8.783$, $p < 0.001$						
Intention to purchase						
Constant	-1.645	1.053	-1.562	0.122	-3.736	0.447
X1 (Instagram vs virtual room)	0.640	0.170	3.772	0.000	0.303	0.977
Trustworthiness	-0.098	0.141	-0.696	0.488	-0.377	0.182
Product attitude	0.369	0.155	2.390	0.019	0.062	0.676
Intention to follow advice	0.263	0.116	2.256	0.026	0.031	0.494
Product involvement	0.225	0.088	2.554	0.012	0.050	0.340
Account relationship	0.4393	0.200	2.196	0.030	0.042	0.837

(continued)

Table 37.1 (continued)

Predictor	Coeff	SE	t	p	LLCI	ULCI
Cycling relationship	0.424	0.272	1.558	0.123	-0.117	0.964
Model summary $R^2 = 0.649$; $F_{(7,91)} = 9.446$, $p < 0.001$						
Intention to recommsend						
Constant	-2.237	0.975	-2.295	0.024	-4.173	-0.301
X1 (Instagram vs virtual room)	-0.032	0.167	-0.191	0.849	-0.363	0.299
Trustworthiness	0.187	0.129	1.452	0.150	-0.069	0.443
Product attitude	0.183	0.146	1.259	0.211	-0.106	0.472
Intention to follow advice	0.316	0.109	2.895	0.005	0.099	0.533
Intention to purchase	0.219	0.096	2.284	0.024	0.028	0.409
Product involvement	0.215	0.083	2.582	0.011	0.049	0.380
Account relationship	0.188	0.188	1.002	0.319	-0.185	0.561
Cycling relationship	0.517	0.252	2.053	0.043	0.017	1.017
Model summary $R^2 = 0.715$; $F_{(8,90)} = 11.741$, $p < 0.001$						
Total Effect Model: Intention To Recommend						
Constant	0.408	0.906	0.451	0.653	-1.390	2.207
X1 (Instagram vs virtual room)	0.264	0.175	1.510	0.134	-0.083	0.612
Product involvement	0.330	0.094	3.518	0.000	0.144	0.517
Account relationship	0.405	0.218	1.859	0.066	-0.027	0.838
Cycling relationship	1.108	0.279	3.968	0.000	0.554	1.663
Model summary $R^2 = 0.513$; $F_{(4,94)} = 8.389$, $p < 0.001$						

Note Confidence interval calculated at 95% of significance; *LLCI* lower limit confidence interval; *ULCI* upper limit confidence interval

of an influencer's campaign, such as the intention to buy the products or to recommend them, are explored. The research also contributes to the social presence theory, examining a context in which the concept had rarely been taken into account. The results demonstrate empirically that this is an aspect to be considered in the future communication of influencers.

The research also provides practical contributions. This study highlights the role that virtual environments could play in the communication of the future, as they present unique features that enhance the experience and can affect users' perceptions and behaviour. Apart from the greater perception of social presence provided by these environments, the possibility of sharing 3D models allows the product to be observed more closely, in greater detail, thus enabling the displayed products to be better evaluated.

37.6   Limitations and Future Lines of Research

This research has some limitations that may lead to valuable future studies. It focuses on a specific sector of the population and specific sports context as is cycling. To achieve a greater generalization of the results obtained, this research could be replicated in other contexts, such as fashion, in which the female gender has a greater role.

Besides, the effect of other technological and content factors on the perception of social presence could be analysed. In this study, only two scenarios have been compared. In the future, the development of mobile technologies and connections facilitate the mass adoption of VR technologies. These devices generate much more immersive experiences [46], which may increase the degree of social presence of the experiences and, consequently, affect users' perceptions and responses.

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Chapter 38
Challenging E-Learning in Higher Education via Instagram

Zorica Bogdanović ⓘ **, Aleksandra Labus** ⓘ **, Dušan Barać** ⓘ **,**
Tamara Naumović ⓘ **, and Božidar Radenković** ⓘ

Abstract This paper discusses employing social network Instagram in higher education via e-learning. Numerous studies have shown that the application of social networks can encourage collaboration among students, increase motivation for e-learning, improve the promotion of study programs and specific teaching subjects within higher education institutions. Over the past few years, the number of Instagram users has grown and opportunities for its implementation in education have increased. Key benefits of using Instagram in higher education are related to enhancing e-learning experience through sharing a post in the form of pictures, videos, or short stories. To test the possibilities of integrating Instagram-related activities in formal e-learning, we have performed a pilot study within undergraduate studies at the Faculty of Organizational Sciences, University of Belgrade. Participants of the research were third-year students who attended the course Electronic Business. Students were involved in Instagram challenges organized by teachers for one month. The tasks for students were to find and post Instagram stories related to assigned e-business topics and to participate in the analysis of their colleagues' stories by giving quick reactions and comments. After completing the e-learning challenge, students were given an Instagram story quiz to test their knowledge. The students completed an online survey and expressed their attitudes on this type of learning. The analysis of results shows students' readiness to use Instagram as an e-learning tool. The results point out that students feel this type of activity challenges their creativity and enables them to learn in new and motivating ways.

Z. Bogdanović (✉) · A. Labus · D. Barać · T. Naumović · B. Radenković
Faculty of Organizational Sciences, University of Belgrade, Belgrade, Serbia
e-mail: zorica@elab.rs

A. Labus
e-mail: aleksandra@elab.rs

D. Barać
e-mail: dusan@elab.rs

T. Naumović
e-mail: tamara@elab.rs

B. Radenković
e-mail: boza@elab.rs

38.1   Introduction

Learning through social media has been recognized as a good practice in higher education [1]. The great majority of students use social networks for educational purposes [1–6]. Social networks, especially Facebook and recently Instagram, became a suitable tool for e-learning that provides students with flexibility in searching, exchanging, and sharing different types of educational content [7]. Learning on social networks encourages collaborative learning, increases motivation, and has a positive influence on the learning outcomes [8].

Higher education institutions recognized social media as a valuable channel for [9]: real-time communication and information sharing, alumni management, promotion of study programs, and improvement of the way of teaching. Higher educational institutions mostly use social network Facebook for real-time communication and information sharing [1, 10, 11]. Facebook fan pages enable a high level of transparency of information and visual identity of educational institutions. Furthermore, they provide effective online promotion of undergraduate, master, and PhD studies. Recently, with the rising popularity of Instagram among students, educational institutions have expanded their activities on this social network. The advantages of using Instagram are related to [7]: easy images posting, short videos (as a regular post or a story), textual content, and hashtags via mobile devices. Given its short and interesting content, easy search via hashtags, quick sharing, and reactions on posts and stories, Instagram becomes interesting for collaboration, teaching, and learning.

The main goal of this research is to test the possibilities of using Instagram as a support for formal e-learning activities in higher education. We have examined students' attitudes toward e-learning on Instagram, readiness to be creative in their assignments and to collaborate among themselves.

38.2   Theoretical Background

Social media can be defined as a plethora of networking tools or technologies for creating and sharing information between Internet users [1, 9, 12]. Furthermore, they can be described as channels that enable the transmission of knowledge between communities and learners [8]. One of the main features of social media is user engagement through [13]: (1) downloading, reading, watching, or listening digital content, (2) sorting, filtering, rating, and commenting content, (3) content creation, and (4) collaboration with other social media users. We distinguish the following types of social media: social networks (e.g., Facebook, Instagram, LinkedIn), wikis (e.g., Wikipedia), blogs, microblogs (e.g., Twitter), multimedia platforms (e.g., YouTube), virtual game worlds (e.g., World of Warcraft), and virtual social worlds (e.g., Second Life), social bookmarking sites (e.g., Reddit), and aggregators [13–16].

The ubiquity of social media has influenced informal learning [3, 9] and has become an integral part of the formal college experience [16, 17]. Many studies

have found that social media, especially social networks, have a positive impact on learning outcomes, motivation, creativity, collaboration, and alumni management in higher education [8, 18–20]. Social networks have been recognized as a good tool for e-learning in higher education [1]. Boyd and Ellison (2007) defined social network sites as Web-based services that allow individuals to develop a public or semi-public profile, create a list of other users with whom they share a connection, and view and traverse connections made by others [21]. Knoke and Yang (2008) defined social networks as a structure composed of a set of actors, and some of whose members are connected by a set of one or more relations [22, 23]. Social networks are a suitable environment for social learning where students can create, share information and knowledge, and collaborate [24]. Social learning has a positive impact on searching for learning materials, motivation, satisfaction with achieved academic performance and learning outcomes, and collaborative learning [18, 24]. Liao et al. (2015) define collaborative learning as a learning process in which students work together, fostering learning through interpersonal interactions, active learning, knowledge building, and team cooperation [19, 25]. The extent to which social networks will be used for social learning depends on the creativity of the teacher.

Last few years many studies have shown that students prefer to use Instagram as a support for e-learning in higher education than Facebook, Twitter, and YouTube [16, 26–29]. In the learning context, Instagram can be used for posting photos and short videos, as regular posts or as a story, and for taking story quizzes. Learning via Instagram can be organized in the form of: (1) educational Instagram page with information related to specific learning topic provided by teachers, (2) searching posts related to specific learning topic using hashtags, (3) students engagement in creating educational content, sharing knowledge, and collaborating with their teacher and colleagues, and (4) testing students' knowledge. Having in mind there is not much research in the literature related to learning via Instagram in higher education, we tried to examine students' reactions and readiness to use this social network for learning purposes.

38.3 An Application of Instagram in Higher Education

38.3.1 Methodology

Within the Faculty of Organizational Sciences, University of Belgrade, the Department for e-business (hereinafter: Elab) organizes online courses at undergraduate, graduate, and postgraduate levels of study. Each year, more than 1000 students attend some of the Elab's courses [1] (Labus et al. 2015). To explore e-learning opportunities via Instagram in higher education, we have performed a pilot study. The study was conducted within the course Electronic Business, in which students attended the third year of undergraduate studies at the Faculty of Organizational Sciences, University of Belgrade. Students that attend course Electronic Business are from

two study programs: (1) information systems and technologies and (2) management and organization. The Electronic Business course teaches students how to write an Internet business plan, design, and implement Web sites and electronic store using HTML, CSS, JavaScript, jQuery, Bootstrap, and WordPress CMS.

The specific aims of the study are to determine students' readiness to use Instagram as an e-learning tool and their attitudes on this type of learning. Research questions for this study are:

RQ1: Are students ready to learn via Instagram, express their creativity, and collaborate among themselves?
RQ2: What are the attitudes of students about learning via Instagram?

Teachers have organized a one-month Instagram challenge "Learning with Elab." The requirement for participating in the challenge was for students to follow the Instagram page of the Department for e-business and vice versa. Rules for participating in the challenge are given in the announcement of Elab Instagram stories and saved in the Highlights section, so it could be available during the entire campaign (Fig. 38.1). The methodology flowchart of this study is shown in Fig. 38.2.

Students were given two tasks during the Elab challenge. The first week challenge for students was to guess which framework is used for the creation of a well-known Web site or application. As a response to the challenge, students needed to publish a picture or a video of a Web site or application on their story and to state which framework was used for the development. Furthermore, students were required to put a hashtag #ucimouzelab (in English: #learning with e lab) within the story and to tag Elab Instagram page @elab_office.

Fig. 38.1 Rules for participating in the challenge "Learning with Elab" given in the announcement of Elab Instagram stories
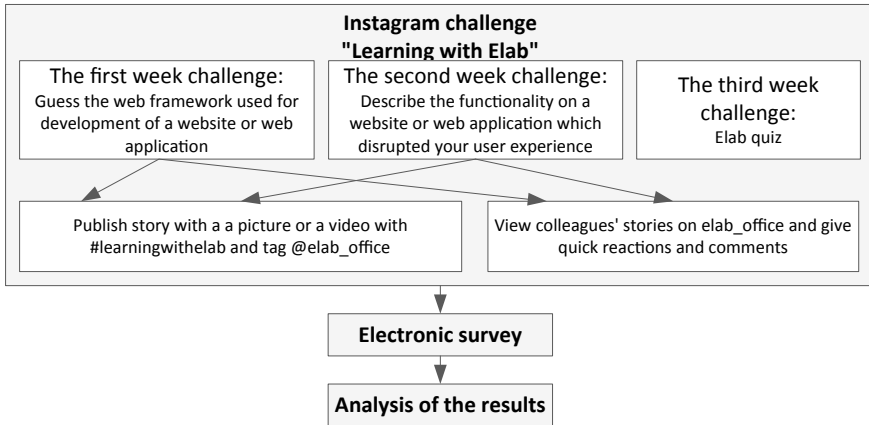
Fig. 38.2 Methodology flowchart

All stories that met the requirements were reposted within the Elab Instagram story feed. The description of the first challenge was given as a regular post on the Elab Instagram page (Fig. 38.3).

The second week challenge was to publish a picture or a video of a Web site or application via Instagram story and to describe the functionality which disrupted their user experience. The announcements of the second "Learning with Elab" challenge are shown in Fig. 38.4.

During the first two challenges, students participated in the analysis of their colleagues' stories by giving quick reactions and comments.

The third week challenge was the Elab quiz. The purpose of the third challenge is testing students' knowledge relating to topics learned in the scope of the E-business course by answering questions on Instagram stories (Fig. 38.5).

After taking the Elab quiz, to complete the Elab challenge, students filled an electronic survey. The survey was available on the E-business course page via Elab Moodle LMS. During the one-month Elab challenge, the Elab Instagram page was visited 58459 times and the number of Elab Instagram followers was increased.

38.4   Analysis of the Results

This section shows the analysis of the collected Instagram data of the Elab challenges and the survey conducted afterward.

The total number of participants in the Elab Instagram challenges was 494, while 347 students filled out the anonymous survey. The survey questionnaire was divided into five sections:

1. I section: students' demographic (Table 38.1),
2. II section: students' use of the Instagram platform (Table 38.2),

Fig. 38.3 Description of the first challenge on Elab Instagram page
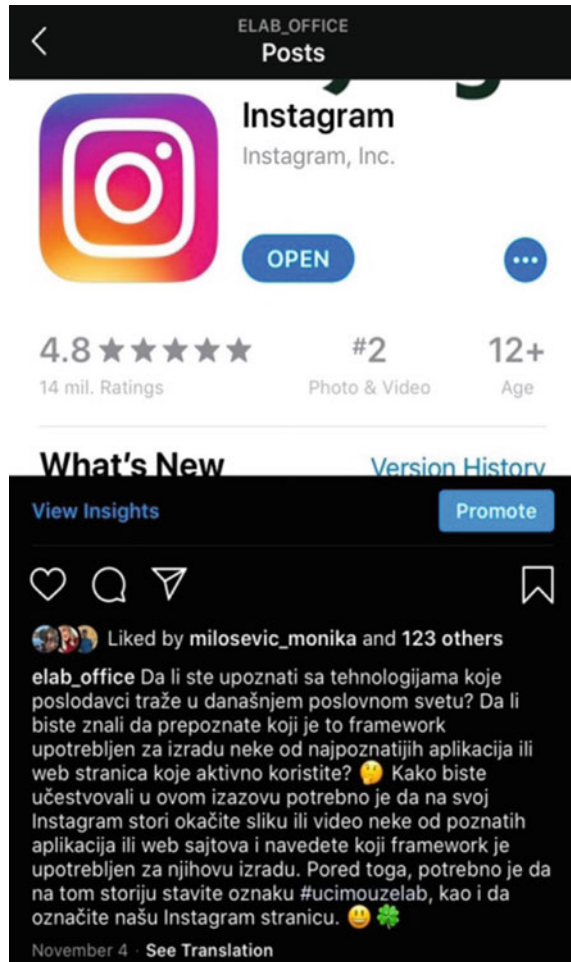
3. III section: students' attitude toward using Instagram in e-learning (Table 38.3),
4. IV section: questions related to the Instagram challenges (Table 38.4),
5. V section: collaboration (Table 38.5).

The demographic analysis of the survey shows that 65.7% of the total number of participants were female, while 34.3% were male, 97.1% are age 18–22, and most of them are frequent Instagram users (Table 38.1).

The analysis of the second section (Table 38.2) shows that majority of the students use Instagram, with only five out 347 students who do not, and 94.2% of those who do, use it often (several times a week), while 70.3% (244 students) have a private Instagram profile.

When asked about the type of content, they usually follow (technology, food, celebrities, friends, fitness, other), 95.39% (331) of students follow friends, 60.81%
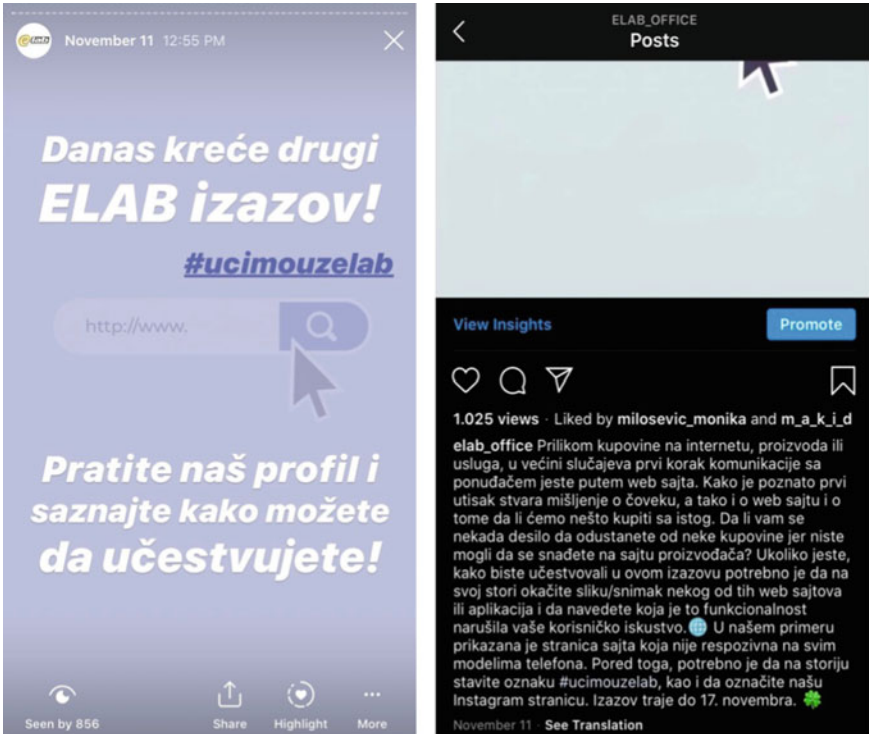
Fig. 38.4   Announcements of the second "Learning with Elab" challenge
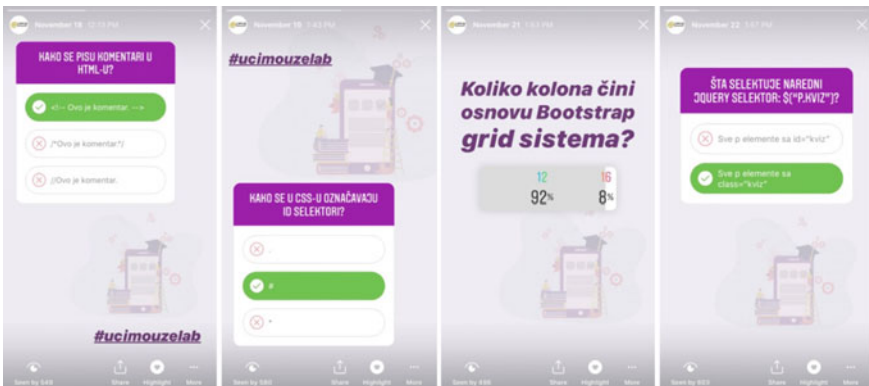
Fig. 38.5   Elab quiz

Table 38.1 Demographics

	Number	%
Gender		
Female	228	65.7
Male	119	34.3
Age		
18 to 22	337	97.1
More than 22	10	2.9
Undergraduate study program		
Information systems and technologies	254	73.2
Management and organization	93	26.8
Frequent Instagram users		
Yes	342	98.6
No	5	1.4

Table 38.2 Usage of the Instagram platform

Question	Number	%
Do you have a private Instagram profile?		
Yes	244	70.3
No	103	29.6
How often do you use Instagram?		
1 + times a day	338	97.4
1 + times a week	6	1.7
How often do you publish on your Instagram stories?		
Everyday	18	5.2
1 + times a week	129	37.2
1 + times a month	136	39.1
1 + times a year	50	14.4
I do not post on stories	14	4.1
What type of content do you follow on the Instagram platform? (multiple choice)		
Technology	117	33.72
Food	131	37.75
Celebrities	211	60.81
Friends	331	95.39
Fitness	109	31.41
Other	82	23.63

Table 38.3 Using the Instagram platform in e-education

Question	Mean score	Standard deviation
The usage of Instagram in education does not have sense	2.29	1.15
The usage of Instagram for educational purposes is useful	3.78	1.06
The usage of Instagram for educational purposes is interesting	4.16	1.02
Usage of Instagram in this or similar purposes is not consistent with the content I publish on my profile	3.07	1.22
Usage of Instagram in this or similar purposes can affect the image I have among my friends	3.35	1.14

Table 38.4 Instagram challenges

Question	Mean score	Standard deviation
Evaluate the subject of the first challenge:	3.92	1.11
Evaluate the subject of the second challenge:	4.12	1.08
Did you follow the answers of other participants?	1.12	0.33
Evaluate the difficulty of questions on the quiz:	3.49	0.97

Table 38.5 Collaboration

Survey questions	Number	%
Did you follow the answers of other participants in the first challenge?		
Yes	302	87.03
No	45	12.97
Did you follow the answers of other participants in the second challenge?		
Yes	304	87.6
No	43	12.4
Would you participate again in similar activities?		
No	20	5.8
Neither no nor yes	33	9.5
Yes	294	84.8
Instagram collaboration analysis		
Participants in the first challenge	309	62.6
User actions on the first challenge responses	2775	2.12
Participants in the second challenge	309	62.6
User actions on the second challenge responses	1644	1.58

(211) of students follow celebrities, food-related content follows 37.75% (131) of students, technology-related content follows 33.7% (114) of students, and 31.4% (109) of students is interested in fitness. Students who marked "other" as one of the choices (23.6%—82) mostly submitted answers that contained fashion, art, sports, animals, humor, and travel.

While analyzing students' attitudes toward using Instagram in e-education (Table 38.3), we concluded that students' overall approval was high. There were 61.1% (2.29) of students who found this method of e-learning meaningful, 66.8% (3.78) useful and 80.9% found it interesting (4.16).

Analysis of the Instagram data showed that out of the total number of participants in the Instagram challenges, 62.55% answered on the first and the second challenge, while 96.9% participated in the third challenge answering one or more questions on the quiz (Table 38.4).

The fourth section of the questionnaire analyzed the students' response to Instagram challenges. The subject of the first challenge was very well received with 69.74% of the students who said they liked the subject. The subject of the second challenge was also appealing to students, where 75.8% evaluated the subject as good or very good.

Students enjoyed the quiz, as the last challenge, the most, rating its subject as very good (82.4%). The number of students who participated in the quiz was 479, where 47.3% (227) of them answered all questions and 40.7% answered all questions correctly. The quiz consisted out of five questions and students evaluated their difficulty as "very difficult" (3.7%), "difficult" (7.7%), "neither difficult nor easy" (39.7%), "easy" (32.6%), and "very easy" (16.1%).

The total number of students who participated in the challenges was 494. During the first challenge, 87.03% of the respondents followed the responses of other participants. Of the 13.26% of respondents who did not participate in the first challenge, 9.22% followed the responses of other participants. During the duration of the second challenge, 87.61% of the respondents followed the responses of other participants in the challenge (Table 38.5).

The survey included questions related to students' satisfaction with the Instagram challenges, as well as questions that allowed students to leave their suggestions regarding the implementation of the challenges. When analyzing the response of users to the question about the general impression and suggestions related to the campaign implementation and this type of student engagement, 77.23% of the students expressed their satisfaction with the campaign in a positive context. Students were asked if they would participate in similar activities again, and 84.73% answered with a score of 4 or 5, where a score of 5 represents the answer "Yes, sure."

Some of the students' suggestions included that more challenges should be introduced and that challenges should last longer during the semester. Opinions regarding the concept of the challenge were divided, and one part of the students felt that they should be conducted in the form of quizzes, because of dissatisfaction with sharing the content on their Instagram page, while the other part of the students were satisfied with the concept of the challenge. The problem pointed out by the students was that

a few students did not have an Instagram profile. The solution to this problem is to extend the campaign to other social networks or communication channels.

The collaboration was measured through actions and reactions on the challenge responses as a percentage of the number of actions/reactions on the total number of views. From the data presented in Table 38.5, we can see that the collaboration was low, which makes an open path for future research.

38.5 Conclusion

In this paper, we presented an example of challenging e-learning in higher education via Instagram. We have examined students' readiness to learn on Instagram, express their creativity, and collaborate. Furthermore, we have analyzed their attitudes on this type of learning.

The analysis of the Instagram data and the results of the survey show that students are willing to participate in this form of activity in the e-learning process. Considering the number of students (611) taking the course Electronic Business, the engagement rate was very high, with 80.8% (494) of students participating in Instagram challenges and 294 students who have submitted the questionnaire expressed willingness to participate in similar activities in the future, rating this approach positively. During the challenge, students were collaborating by replying to colleagues' stories with comments and quick reactions. Even though the number of reactions was high, considering the total number of views, we can say that there is much room for improvement. Accordingly, we concluded that there was a high approval rate among students for using Instagram as an e-learning tool. Future research will be directed toward initiating the collaboration between students, introducing more learning activities within Instagram, and the integration with other social networks.

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Chapter 39
Social Media Content Marketing Strategy for Higher Education: A Case Study Approach

Jorge Esparteiro Garcia (ORCID)**, Joana Seixas Pereira, and Álvaro Cairrão** (ORCID)

Abstract Companies and brands are increasingly using social media networks as one of the main channels of disseminating products and services, due to the exponential growth that these platforms have had in the last few years. Universities and Higher Education Institutions are also using the contents published on social networks as a way of advertising the institution itself and its training offer. Content marketing for social media has increasingly become one of the most used strategies by companies and brands to increase engagement and attract new followers on their social networks. The main goal of this paper is to develop a content marketing strategy for School of Business Sciences (ESCE) of Polytechnic Institute of Viana do Castelo's social networks as Facebook and Instagram that can generate an increase in the school's awareness and followingly increase the number of new students. This study also aims to create greater identification of students with ESCE, to improve the engagement of its social networks with their followers and to get more interaction from users who do not usually interact with ESCE's social network profiles. Subsequently, content marketing strategy was developed, and it analyzed the results obtained with the statistical analysis of ESCE's social network profile. With the results obtained with this study, it was concluded that the application of a social media content marketing strategy for a higher education school had very positive results, on increasing the engagement in social networks by the followers of ESCES's social networks.

39.1 Introduction

In the current paradigm of a much more informed society, the way in which universities and higher education institutions communicate with their target audience is one of the most important and differentiating factors. As stated by Rodrigues [1], they

J. E. Garcia (✉) · J. S. Pereira · Á. Cairrão
Instituto Politécnico de Viana Do Castelo, Viana Do Castelo, Portugal
e-mail: jorgegarcia@esce.ipvc.pt

J. E. Garcia
INESC TEC, Porto, Portugal

have to be able to communicate with the largest number of people and, above all, they have to know how to use the means to do it in the most assertive way.

Traditional concepts of communication with the customer are being replaced by sharing content with information valued by the consumer. According to Pulizzi and Handley [2], 96% of companies with Business-to-Consumer (B2C) strategies use content marketing as one of the main tools of their strategy, adding that the key is to "move" the consumer, making them feel affected in a positive way and thus create an engagement between both parties, assigning the user an important and useful role. The same applies to universities and other higher education institutions that wish to attract and engage students. Wandel [3] argues that the creation of a community, through content marketing, is the starting point for a school to attract and create engagement from the moment users become candidates until the moment they become students.

The Higher School of Business Sciences (ESCE) of the Polytechnic Institute of Viana do Castelo (IPVC) is currently present on the social networks Facebook and Instagram. However, despite having a considerable number of followers, we consider that engagement with its followers is relatively low. This problem is the basis for the presented project, which aims to reverse the current trend and, through the use of the definition of a social media content marketing strategy, increase engagement with users and, consequently, attract new students, as well as increase the notoriety of the School of Business Science. Content marketing [4] is a marketing strategy for creating and distributing valuable, relevant and consistent content to attract a well-defined audience segment, with the objective of obtaining profitable actions by customers. For the case study to be developed in this project, content marketing is considered the most suitable technique, given that one of the main objectives of the project is to create valuable content for the customer/consumer, in order to attract it and create a connection with the institution, making him want to share and learn more and consume, instead of ignoring or even avoiding it. This project combines the creation, implementation and analysis of the content marketing strategy, applied to a higher education institution, which will allow a more complete assessment, compared to other studies carried out. In creating a digital content marketing strategy, Monteiro [5] concluded that it is not enough to create "attractive" and "innovative" content, which is constantly updated, and the path to success is to build a consolidated strategy that allows the analysis of its effectiveness. Studies carried out in the context of content marketing in higher education do not conclude an ideal strategic model that can be used. However, Baworowsky [6] states that the best strategy to be able to increase the value of social media as a recruitment tool is to involve students outside the limits of traditional research communications. Several studies [7–10] claim that emotion is the most determining and fundamental factor for sharing content. In a study [11] about the factors that generate user involvement also concluded that the reasons that lead people to "like," share and comment on content on Facebook are related to the fact that they identify with the message that they transmit. In the same study, the author also mentions that, to create engagement with users effectively, it is not enough to share content, but it is necessary to generate quality content, and

the contents that users most react with "'likes," comments and shares are images, images/texts (memes), and videos.

The remainder of this paper is organized as follows: The next section discusses the existing related work. Section 3 gives an overview of the social media content marketing strategy that was defined, and Sect. 4 presents the case study that was developed for the social media profiles of ESCE. Results obtained are presented and discussed in Sect. 5. Conclusions and future directions conclude the paper in Sect. 6.

39.2   Related Work

The rapid changes in consumer behavior require, on the part of companies and institutions, a constant update of their marketing strategies in the digital domain, and, currently, the presence on social networks is essential.

Brands that are not yet present on social networks will be quickly overtaken by the competition that adopts this medium as the main vehicle for communicating with customers and for applying their marketing strategies [12]. Social media marketing consists of creating a relationship and dialog with the target audience so that, more than passing on the message, you can receive and exchange ideas with consumers [13]. More and more, consumers use social media to obtain more information about certain products and services, before the purchase decision. For this reason, Edelman [14] refers that the role of marketeers who will accompany the entire process of the online consumer experience has more than the opportunity to gain the trust of this consumer, generate knowledge and translate into sales. Traditional marketing is not as relevant and useful as it used to be, as the current customers are more educated people who demand more information, with accurate data that will lead them to a better understanding of products and services and, consequently, to better marketing decisions. Holliman and Rowley [15] compared different studies looking for answers to the question of what content marketing is and developed an empirical definition of content marketing that states that it involves the creation, distribution and sharing of relevant, appropriate and attractive content for involving customers, also adapting the definition of the American Marketing Association as: Digital content marketing is the activity associated with the creation, communication, distribution and exchange of digital content that creates value for customers, partners and the company and their brands [15]. Content marketing was also defined as the art and science of regularly sharing information with the target audience, reinforcing the brand's value [16]. Recent studies consider content marketing to be a form of marketing communication, in which brands produce and distribute content to consumers with the main objective of generating interest, involving consumers and influencing their behavior [17]. Taking into account the authors, content marketing can be defined as a set of actions whose main objective is to create and promote valuable and relevant content on the Internet, thus attracting the consumer. Monteiro [5] adds that, today, a successful marketing strategy is one that makes companies able to connect with their customers in new and innovative ways. Regarding the distribution of content, there are three

questions that must be asked to enhance the reach of the content and increase brand awareness: What is the purpose of your business? What does your audience want to receive? Where do your consumers spend most of their time?

39.2.1 Social Media and Higher Education

The evolution of the Internet is probably one of the most significant changes in the process of choosing a university.

In 2003, Kirp [18] predicted that the easy access to the Web and the easily modified code of the pages would allow the institutions to create interactive relationships with the future students and that it would be a considerable advance of marketing in relation to unidirectional communication. A few years later, Facebook emerges as a social network and changes the paradigm, allowing organizations to create pages and start communicating directly with their customers [19]. Currently, Daun-Barnett, Behrend and Bezek [20] claim that social media can substantially change the way institutions create a connection with future students. However, the vast majority of institutions are still looking for the most engaging content, on these same networks, to increase their brand awareness, attract students, interact with current students and stay in touch with alumni. Germain [21] says that in addition to social networks being an excellent way to connect with potential students, they are also important to connect with potential parents of those same students. He also points out that when looking for universities, students and their families do not just look for information leaflets describing courses and curricular plans, they look for a place where they can take part and consider a second home. The university is, for the vast majority of students, one of the most important and life-changing phases of their lives, and according to Germain [21], the most successful schools in social media are using them to share some of the experiences of these students, referring that what potential students preferentially look for information coming from real students, for considering genuine and authentic, unlike the messages of the administrations. With regard to the way content is presented online, McPheat [22] considers three formats: textual, visual and audio. According to the author, the visual format is what has the most impact on consumers, but underlines that the textual content has to be well structured. The support text is fundamental whenever the visual format, by itself, does not have the capacity to be an entirely relevant content.

39.3 Content Marketing Strategy

Taking into account the above-mentioned authors, the strategy of this project was designed with a focus on producing meaningful content for the defined target.

The strategic point was to find content that could meet the objectives of the project and also of the institution under study and, at the same time, provoke interest in users

in order to make them interact with the content. Consumers currently favor content generated by other users for reasons mostly emotional and because they consider it more credible. In this way, and taking into account the new trends, this project aims to position itself through the creation of content that creates emotional relationship with the followers and makes them want to consume more content produced by the institution.

For this project, the creation of content in a visual format was chosen, as it is the content that generates more interaction on the part of online users, and this must always be accompanied by text support because, according to the authors studied, the two formats define better content, thus generating more value for the user. Furthermore, face photographs allow a more immediate recognition of the person and when accompanied by the descriptive text it provides an identification by the users who, in turn, when they feel identified and create some emotional relationship with the publication, react more quickly to the content with "likes," comments and shares. The "Essence of ESCE" is the name given to this content marketing project for social networks that School of Business Sciences (ESCE) regularly uses Facebook and Instagram. The idea of this project is the regular publication of photographs that portray the authenticity of people from the School community. More than just faces, it intends to share portraits that capture different life stories of the people, as well as paths and values, but above all they capture genuine looks that add common wills and dreams. This series of photographs brings together the faces of the people who are part of the ESCE academic community, from students, teachers and staff. For the formalization of the creation of the content marketing strategy to be used, the formula B.E.S.T. [23]: Behavioral—the objective is to create pride with the institution in the entire user community. Make them feel identified with the publications and, consequently, interact with the publications. Evaluation will be made through the number of reactions to the publication, comments, as well as the number of shares; Essential—in order to benefit users in the best way, the content was made directly with them, so that there is greater interaction and greater relevance and interest for it, which can bring benefits at a personal and professional level, namely the notoriety and positive comments that may arise regarding the publication. The type of media chosen was photography; Strategic—the strategies of this content marketing strategy are, for the most part, similar to the purposes of ESCE. Make people proud of the school they are in and, in turn, pass this message on to potential new students. In addition there are other offline strategies that support these same objectives, such as the creation of interaction events from the academic community; Targeted—our target is all our users, with a greater focus on the current academic community and potential new students.

39.3.1 Definition of the Content to Be Developed

For the development of the content of this project, it was necessary to do a research of projects that develop the same kind of intended content [24], in order to create

Fig. 39.1 Example of a photo with focal length and aperture that allows an unfocused background, with a shallow depth of field from project "Humans of New York"

a concept line so that there would be a uniformity of the photographs and text, and thus, it would be easier to identification. The visual concept of this project combines color photographs, with horizontal orientation, which can be portrait or half-body, taking into account the characteristics of each person. The photographs must be taken from scratch, taking into account the requirements of the project and all of them captured in the school environment and spaces, so that there is also identification with the location. However, the place does not need to be in full prominence so that the essence of the connection with the person posted is not lost. Thus, photographs should be taken with a focal length and aperture that allows an unfocused background, with a shallow depth of field. As a way of creating stronger ties with users, in the photographs captured, the photographed people should have a direct look at the camera, thus creating a stronger connection. The descriptive text that must accompany all images must also be created with a combination of personal identification elements (Fig. 39.1) with more personal characteristics that allow those who know to recognize and those who do not know to know better and create empathy. For this, the text must be written in the third person with recognized elements and not just a self-description with an account of personal life like in other projects, like "Humans of New York - humansofnewyork.com."

39.4 Case Study of School of Business Sciences

The School of Business Sciences (ESCE) is an organic unit of the Polytechnic Institute of Viana do Castelo (IPVC), which started its activities in November 2001. ESCE is present in the main existing social networks. The Facebook profile was created in 2010 and the Instagram and Twitter profiles in January 2015. However, despite having

a considerable number of followers, engagement is relatively low. Before applying the developed strategy during this project, had about 2000 followers on Instagram with an average engagement per post of 2% of the total number of followers. With regard to Facebook, the total number of fans on the page was 6448 in March and the average interaction with the publications was also representative of only 2% of the total number of fans. Only in some exceptional situations, such as academic and scientific events, there was greater engagement, which consequently resulted in a slight increase in followers. One of the main reasons for these reduced numbers is due to the lack of a Web marketing strategy properly designed with users in mind. The implementation of a proper strategy has as main objective to reverse this trend and, in the short term, to increase engagement with users and, consequently, attract new students, as well as increase the reputation and reputation of ESCE.

39.4.1 Definition and Development of Content for Social Media

The content developed consisted of capturing photographs of people who make up the ESCE's academic community, from students, teachers, staff and other members of the IPVC, guests and speakers. As mentioned, in order for the photographs to be standardized and these could be easily identified as an integral part of the project, when published separately in social media, a set of characteristics that constitute the visual concept of the project was considered. Thus, we opted for color photographs, portrait type, with horizontal and half-body orientation to create consistency and coherence between images over time and to be more easily adaptable to the social networks to be used. Another important feature is that the people photographed had their eyes on the camera (Fig. 39.2). This look allows for a stronger connection directly with the person photographed and an identification of the followers with that person.

The visual concept also provides for the photograph to be taken with a focal length and aperture that allows an unfocused background, with a shallow depth of field. Although the choice of scenarios was made in order to explore the effect of the small depth of field, all the photographs were taken in the context of the school, so that, in this way, identification with the new facilities was also created. As can be seen in an example of publication in Fig. 39.2, the defined concept is fulfilled, maintaining a guiding line between all the photographs, thus allowing an easy identification of the project. Different people and places, but always with the common points of the low depth of field, the half-body photography, the naturalness of the photographed and the direct look at the camera, allow, even those who do not know, to feel familiar with the person and the surroundings.

Along with the publication of the photographs, a text structure was established that, likewise, intends to maintain a uniformity between project publications, and that they stand out from other publications made on the institution's social networks. For

Fig. 39.2 Photo of the "The essence of ESCE" project: environment–library

this, in each photograph, the following structure was created with the identification of the person photographed. The descriptive text was written individually, taking into account the personal and professional characteristics of each person. In all texts, there is a more personal approach with characteristics of each one, which allows the user to create empathy and affinity with the person and, in a subliminal way, dissemination of the school, courses, services provided by the institution. The content to be developed thus encompasses a set of characteristics that allow publications within the project to resemble and facilitate identification and distinguish them from other posts (Fig. 39.3).

39.5 Results

To achieve the results that will meet the proposed initial objectives of defining and implementing a content marketing strategy for the social networks of the Higher School of Business Sciences of the Polytechnic Institute of Viana do Castelo, as a way to increase brand awareness and attracting new students; create greater identification of students with ESCE; improve the engagement of ESCE's social networks with its followers; to obtain more interaction from users who do not normally interact with ESCE's social media profiles, a quantitative analysis was made using electronic records and a qualitative analysis using structured interviews. As can be seen in

Fig. 39.3 Example of a publication of the "the essence of ESCE" project in Facebook–students
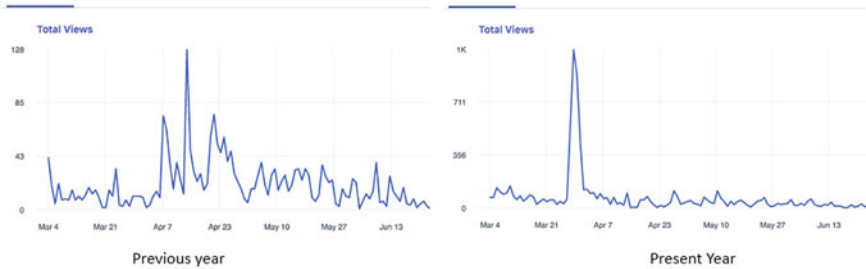
Fig. 39.4 Facebook page visit between March and June in different years

Fig. 39.4 for the same time period in different years, we can see that the number of visitors to the school's Facebook page is increased.

The chart presented in Fig. 39.5 represents the number of reactions to "The Essence of ESCE" publications, compared to the other publications, and initially, excluding specific cases, the project's publications created more reactions on the part of users. Over time, publications have become more consistent with each other with regard to reactions; however, the project's publications have always had higher results than the others in the same time period. The average number of reactions per publication in the previous year was 16, while in this year, the average of likes and other reactions rose to 43. Also, in the comments, there is an even more marked growth, having grown from almost zero from 0.1 to 2.2 average per publication (Fig. 39.6).

For this study, thirteen people were interviewed, chosen at random, from three groups: students, employees and teachers, aged between 18 and 50 years. The sample includes two employees, the school dean, three teachers and nine students. In the
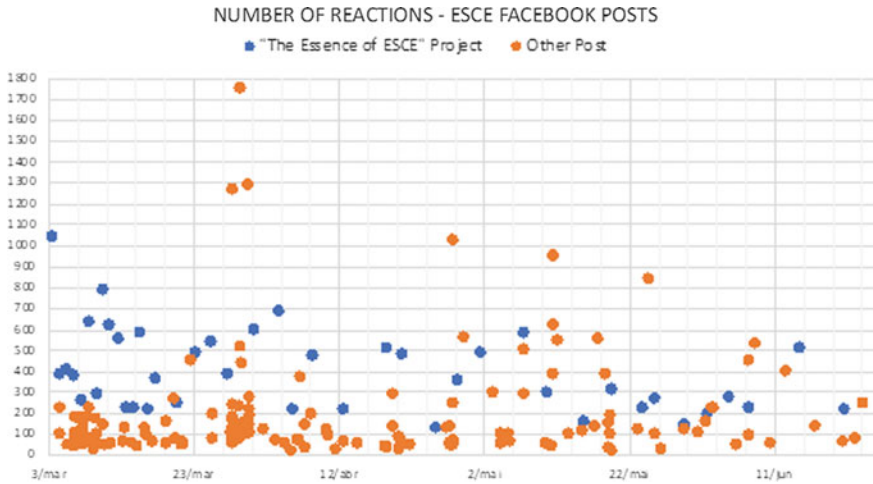
Fig. 39.5 Comparison between the number of reactions of posts from the project and other posts
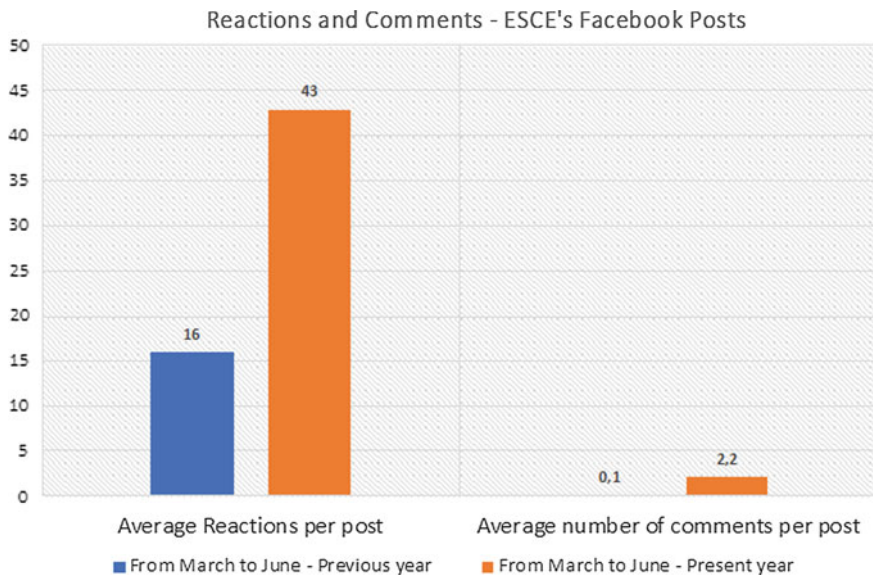
Fig. 39.6 Comparison with average number of reactions and comments per post in different years

approach to the knowledge of the project, all respondents said that they had knowledge, and one of the respondents hesitated to answer because he did not associate the name with the content viewed. In most cases, respondents were able to indicate, in the space of time, the start of the project. Regarding the contribution of the project, the understanding of students, teachers and staff finds a common point, which is the

creation of stronger connections between the community and ESCE. The school Dean also makes reference and goes further stating that "we know that most new students are advised by students who are already here. The speech of our students is changing, the enjoyment of being and 'belonging' is fundamental and this is something that the management is unable to instill."

39.5.1 Discussion

With the implementation of the social content marketing, there was a significant increase in engagement when publications from the project were made in relation to other publications by the school. Added to this, there is also an increase in reach and engagement in the rest of the content produced by the school, launched among the project's publications. In the same period of time, compared to the previous year, there was a difference of more than a thousand likes in the publications made on the Facebook page.

The category of employees was the one that gathered the highest average of likes per post, which is also confirmed in the interviews when asked about the photo they liked the most or the text that they remember most. The data collection made through the interviews made it possible to perceive that, in general, the academic community managed to understand and explain the concept of the project, as well as its objectives.

39.6 Conclusions and Future Work

The main objective of the paper was to define and implement a content marketing strategy for the social networks of the School of Business Sciences of the Polytechnic Institute of Viana do Castelo, as a way to increase brand awareness and attract new students. It allowed to identify various components necessary for the implementation of a social media content marketing strategy for the main existing social networks.

It can be concluded that the objective of improving the engagement of ESCE's social networks with its followers, as well as obtaining more interaction from users who do not normally interact with ESCE's social networks profiles, was achieved. The analysis made corresponds to the period from March to June, compared to the same period of time in the previous year. Before the implementation of this project, Facebook had a low engagement rate, with an average of 16 reactions and 0.1 comments per post, and during this project, the average number of comments per publication was 2.2 and the average reaction value has risen to 43 per post. The same was reflected in Instagram. In the same period in the previous year, there was a total of 162 likes and only one comment in all the publications made. During the same four months of this year, the total number of comments to the publications was 12 and likes had a strong growth, registering 3193 likes in publications.

For many higher education institutions, this study can be quite relevant, as it provides an overview of the use of a social media content marketing strategy, proving that, using content adapted to this sector and the target audience, it is possible to increase engagement with the current online followers, meet what they are looking for and, eventually, this turns into an increase in the number of new students. Since this strategy was successful in the School of Business Sciences, it would also be interesting to replicate and apply the same strategy in the other schools of Polytechnic Institute of Viana do. Considering that the project was very successful at ESCE, as it is a small institution, located outside large urban centers, it would represent an interesting research on the applicability of the project at different types of universities, to understand whether the same strategy it is also effective when applied in other contexts of those studied in this paper.

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Chapter 40
Identifying and Exploring Key Drivers of Customer Engagement on Social Media: A Netnography Approach

Cristiana Tavares and Mafalda Nogueira

Abstract As social media increases its presence in consumers' lives, it becomes crucial for companies and organizations to understand how they can adapt their marketing efforts to that reality. The main goal of this study is to provide new insights on this phenomenon, by exploring and understanding key drivers of customer engagement generated through social media. To answer the research objective, a literature review was conducted, focusing on customer engagement, its metrics, and influencing factors. Adopting a netnographic methodological approach, posts from the 11 most recognized brands, in terms of marketing efforts, were collected. A total of 458 Facebook and Instagram posts were analyzed in terms of post type, time frame, interactivity, and post appeal. Six multiple linear regression models were conducted to better understand the impact of these variables on customer engagement. Our findings reveal that the use of emotional appeals in branded posts results in a superior number of likes, reactions, comments, and shares on social media, in comparison with functional appeals. The results also showed that the use of images in branded posts seems to promote more reactions and comments on Facebook, while the video format stimulates shares. Finally, no evidences were found that the day of the week in which posts are published, and the use of interactive elements on them influence customer engagement on social media.

40.1 Introduction

Social media's presence in people's daily lives has been increasing at a fast rate. This has been giving companies several opportunities to improve their businesses, acquiring great importance in the corporate world [17].

C. Tavares (✉) · M. Nogueira (✉)
IPAM, Porto, Portugal
e-mail: cristianavts@gmail.com

M. Nogueira
e-mail: mafalda.nogueira@ipam.com

It became crucial for businesses to understand how they should interact with their online communities and which factors influence customer engagement. Despite the large amount of academic research on this topic, the existing literature does not fully capture the continuous development of social media characteristics and the new platforms that emerge [5, 7]. Therefore, this study aims at contributing to this discussion, theoretically and empirically, by providing new insights on how marketing professionals, CEOs, CMOs, digital marketing specialists, and organizations in general can better understand their customer engagement practices on social media and design suitable strategies accordingly.

The main goal of this study is to provide new insights on this phenomenon, by exploring and understanding the key drivers of customer engagement generated through social media. Its specific goals are as follows:

- Understanding the relationship between key drivers of customer engagement (post type, time frame, interactivity e post appeal) and its dimensions (likes, reactions, comments, and shares) on Facebook and Instagram;
- Assessing the impact of the drivers of customer engagement (post type, time frame, interactivity e post appeal) on its dimensions (likes, reactions, comments, and shares) on Facebook and Instagram;
- Identifying which of the drivers of customer engagement (post type, time frame, interactivity e post appeal) are used the most by brands on Facebook and Instagram.

Answers to these research goals were obtained by the analysis of the most recognized brands, in terms of marketing efforts in Portugal, according to Scopen [19].

40.2   Literature Review

40.2.1   *The Importance of Content Marketing on Customer Engagement*

Customer engagement presents several advantages for brands, leading to a better organizational performance, sales increase, profitability, and loyalty [2].

Hollebeek et al. [11] define it as the cognitive, emotional, and behavioral disposition of a customer regarding interaction with a brand.

The previous studies [6, 13, 18] suggest that users on Facebook interact mainly through three distinct behaviors: likes, comments, and shares. Regarding Instagram, the main engagement behaviors are likes and comments [5, 10]. On Facebook, there are also reactions, a powerful indicator of users' feelings toward content [20].

Marketing professionals are increasingly adopting content marketing in substitution of intrusive publicity [9]. In order to promote customer engagement on social

media, the content strategy must focus on identifying the most interesting, relevant type of content for the audience [4]. Making relevant content available might help generate engagement on social media. In turn, engagement itself can also help increase the efficiency of content marketing [12].

40.2.2 Key Drivers of Customer Engagement on Social Media

Sabate et al. [18] established a distinction between soft and hard criteria on social media posts. The first takes into consideration the interpretative aspect behind the message of a post. Hard criterion refers to those which do not require subjective interpretation and that are able to be quantified.

Several studies focus exclusively in soft criterion, analyzing the effect of content categories from posts, such as publicity, events, information and promotion [5] or the appeals used such as emotional or functional/utilitarian ones [8, 21]. Other studies include only hard criterion in their analysis, devoting to the more technical aspects of posts, as the post type (image, video or link) and the time frame in which it is published (hour, day and week of posting) [18].

Some authors include both types of criterion in their conceptual frameworks [1, 13, 1] suggest four factors that influence customer engagement that are both hard and soft: post type, time frame, message interactivity and post appeal. Following Balio and Casais [1]. Given the centrality of these hard and soft criteria for the present study, the next sections provide important considerations on how they are being discussed in the literature.

Post Type

Most studies show that post type is a predictive factor of customer engagement metrics, which shows its relevance [1, 6, 13, 18, 20].

Several authors have considered post types on Facebook to be images, videos and links [1, 8] and post types on Instagram to be images and videos [1].

The results of this analysis are not consensual. For example, Kim and Yang [13] suggest that using images has a negative impact on the number of comments. Cvijikj and Michahelles [6] concluded the opposite. Balio and Casais [1] observed that the video format positively influences all the metrics and generates more engagement than images, recommending its use by brands.

Time Frame

Knowing when is the best time to post is important for brands [6]. Academic research has been studying this aspect from three different perspectives: The first, and most popular one, takes into consideration the day of the week in which the post is published (weekdays or weekend) [6, 8, 21]; the second one analyzes the influence of posting time [6, 18]; and the third perspective considers seasonality, analyzing different months of the year [1, 5].

Regarding the day of the week perspective, the results vary. Some authors claim that this element has no impact whatsoever in customer engagement metrics [18], while others show that posts published on weekdays obtain more engagement [6].

Interactivity

A user's perception that communication with a brand online is a real possibility is decisive to create engagement [16]. Interactivity refers to the interactive elements present in a post. A post is considered interactive when it asks or incentivizes an answer from the audience [1, 13].

Balio and Casais [1] concluded that post interactivity is a factor that influences three out of four metrics of customer engagement, showing its relevance. Other studies, however, found that it only influences the number of comments, which are increased when posts are interactive [8, 13].

Appeal Type

Users' desire connected with brands, and they wish to have unique experiences. That is why it is important to understand which types of appeal work better in terms of customer engagement [1].

Recent studies have been using the functional and emotional appeal types [15, 21, 21] has concluded that the key driver behind social media communication success is precisely the appeal used in the brand's posts. This appeal, either emotional or functional, seems to affect the attitude (likes, comments, shares) of the consumer regarding a post. As such, this is a critical element in the study of customer engagement.

40.3   Conceptual Model

Two conceptual frameworks are presented due to the differences between the two social media platforms, Facebook and Instagram. For the purposes of better explaining customer engagement behavior, and following Balio and Casais [1] framework, four main categories were included: post type, time frame, interactivity, and post appeal.

The posts were coded for their post type. There were three different and mutually exclusive possibilities: image, video, and link. The time frame's coding procedure was immediate as the days of the week were visible on the screenshots taken. As suggested by the coding scheme of Cvijikj and Michahelles [6], the day of the week was coded for each post. When a post featured elements that asked or promoted a response from the audience, they were directly considered interactive, as in the work of Kim and Yang [13]. Lastly, the post appeal followed the coding scheme of De Vries et al. [8] and Wagner et al. [21], distinguishing between emotional and functional appeals.

Likes, reactions, comments, and shares were included in the models as the behaviors through which users express customer engagement. For Instagram, only likes and
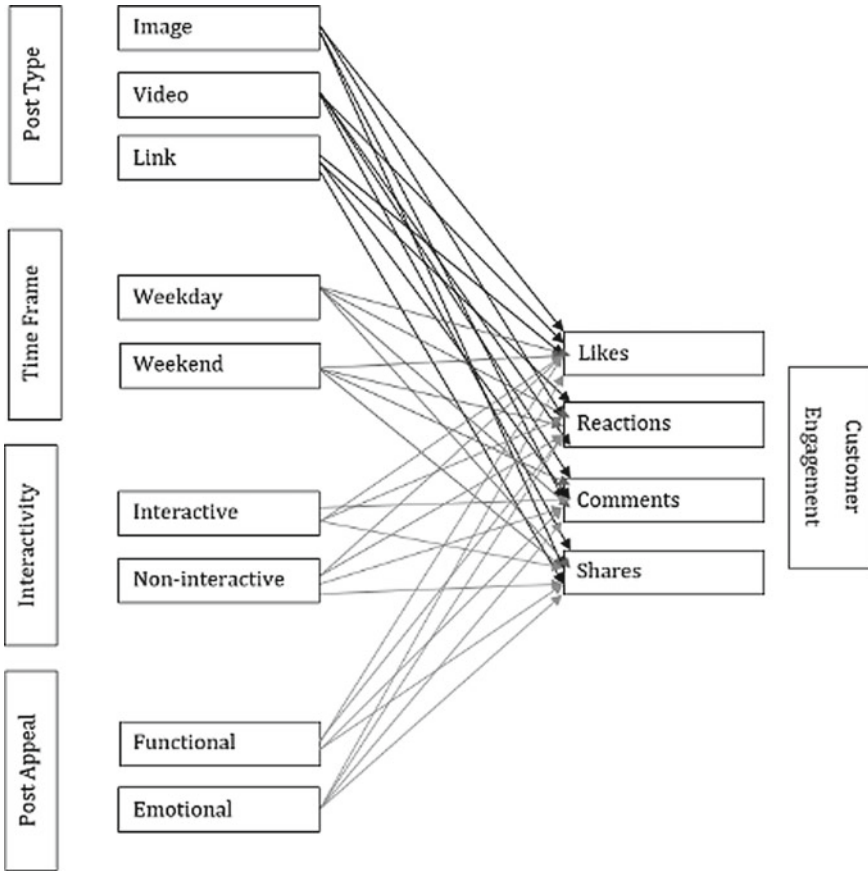
Fig. 40.1 Framework to analyze customer engagement on Facebook

comments were included, since the other actions are not enabled there [1] (Figs. 40.1 and 40.2).

40.4 Methodological Decisions

40.4.1 Mixed Methodological Approach

A mixed methodological approach was adopted since both qualitative (content analysis) and quantitative (descriptive statistics, point-biserial correlations, multiple linear regressions) techniques were needed to answer the research objectives. This decision is supported by the previous studies [1, 6, 8].
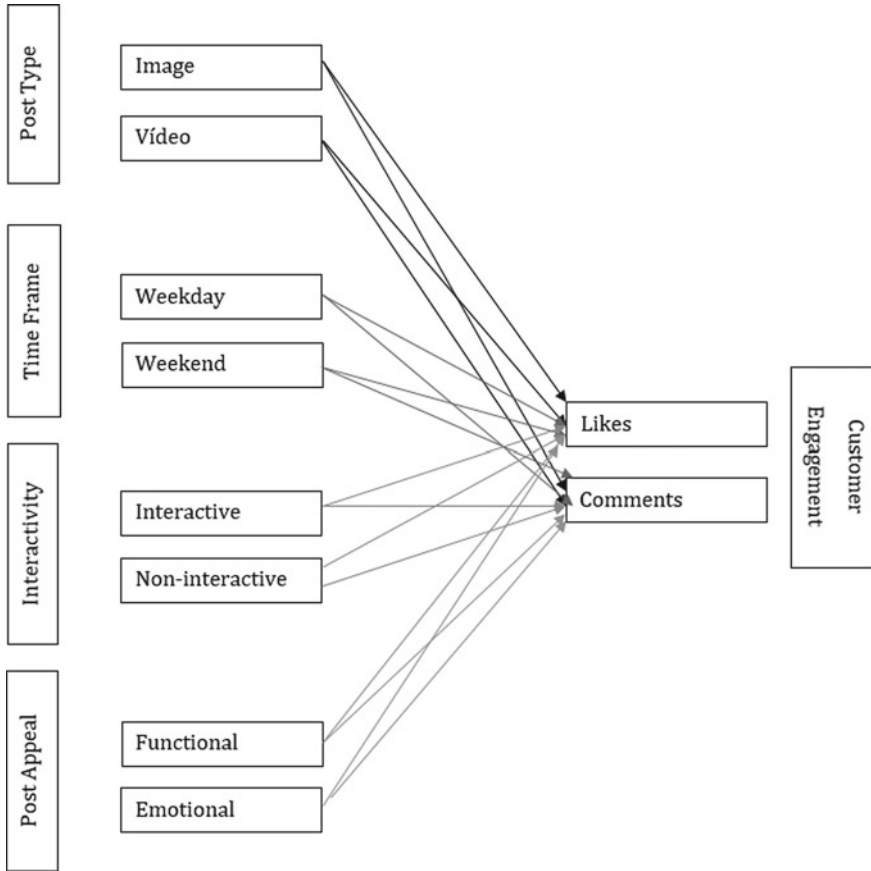
Fig. 40.2 Framework to analyze customer engagement on Instagram

40.4.2 Data Collection

As a marketing research technique, netnography uses public information, available online, to identify and understand the needs and influences behind the group decisions of consumers in a digital setting [14].

The netnography that was performed for the purposes of this study targeted the most admired brands in Portugal for their marketing campaigns [19]: Lidl, NOS, Vodafone, Super Bock, MEO, IKEA, McDonald's, Turismo de Portugal, Continente, Netflix, and Sumol.

The posts collected were published between 1 and 29 February of 2020. The manual data collection occurred during the month of April, more than a month after the posts were published on the brands' social media profiles. According to Sabate et al. [18] and Wagner et al. [21], one month is a sufficient time interval between the

posting date and the moment of data collection, since it is not expected that a post receives more engagement after 30 days of being published.

A total of 458 posts were collected from the brand profiles, 264 on Facebook and 194 on Instagram. It was not possible to collect Instagram posts from Turismo de Portugal since the company does not have an account on this social media platform. Facebook and Instagram were the social media platforms selected for this study due to a future research suggestion from the work of Balio and Casais [1]. The authors suggested that the inclusion of more brands and a larger number of posts to study customer engagement key drivers on Facebook and Instagram would add valuable insights to the existing academic research on this topic.

Screenshots of each post were taken, making it possible to capture the variables needed such as the number of likes, reactions, comments, and shares as well as the publishing dates and the content of each post.

40.4.3   Data Analysis

First, a content analysis was conducted to identify the post appeal and interactive elements present in branded posts. Then, using descriptive statistics, the usage of customer engagement drivers was analyzed, to identify which were used the most. Point-biserial correlations were performed to assess the relationships between the variables. Lastly, six multiple linear regression models were conducted, using the Enter method, to analyze the effects of post type, time frame, interactivity, and post appeal on the number of likes, reactions, comments, and shares that the brands get on Facebook (four models) and Instagram (two models).

As most of the independent variables (post type, time frame, interactivity, post appeal) were binary, there was not the need to apply the dummy coding technique to all of them, since it is possible to build multiple linear regression models with variables composed by two categories. Only the post type variable, featuring three possible categories on Facebook, was transformed through this technique, as in the work of De Vries et al. [8].

To satisfy all the requirements needed to perform multiple linear regression models, the dependent variables were transformed using the natural logarithm. This was done in order to ensure a normal distribution of the residuals. The behavior of the residuals was tested for normality, independence, multicollinearity, mean of zero, and constant variance, assuring all multiple linear regression assumptions.

40.5 Results

40.5.1 Descriptive Analysis

The descriptive analysis of the variables revealed that, regarding dependent variables, Facebook presents a lower mean of likes ($M = 1290.2$) than Instagram ($M = 4278.9$), but the comments mean is higher on Facebook ($M = 76.6$) than Instagram ($M = 29.7$). If we look at the platforms individually, likes have the highest mean of all metrics on Facebook and the same happens on Instagram.

Regarding the independent variables, the descriptive analysis revealed that on Facebook, same as Instagram, most posts are published on weekdays. Images are the most used post type on both platforms and the same goes for non-interactive posts. The main difference found between Facebook and Instagram relied on the usage of post appeals. Emotional appeals seem to be more used than functional ones on Instagram, and the opposite happens on Facebook.

40.5.2 Content Analysis

A content analysis was performed to identify the appeals used on each post, as well as the presence of interactive elements.

Any post that directly asked a question or promoted an answer was directly considered interactive. Additionally, messages that included questions or action verbs are examples of what can be considered as elements that promote responses. The content had to solicit replies in order to be considered as 'interactive'.

Functional appeals are used to promote an action, relying on arguments based on logic and reason, by highlighting the functional advantages of a product such as quality and price. The emotional appeal, on the other hand, focuses on emotion. To be considered emotional, the content had to promote certain emotions that the consumer would feel while using the product/service.

40.5.3 Point-Biserial Correlations Between the Key Drivers of Customer Engagement (Post Type, Time Frame, Interactivity, Post Appeal) and Its Dimensions (Likes, Reactions, Comments, Shares) on Facebook and Instagram

On Facebook, significant positive correlations were found between post appeal ($r = 0.290$; $p < 0.001$) and image ($r = 0.126$; $p < 0.05$) with likes; post appeal ($r = 0.197$; $p < 0.05$) and image ($r = 0.197$; $r = 0.001$) with reactions; post appeal ($r = 0.208$;

$p < 0.05$), image ($r = 0.181$ $p < 0.05$), and interactivity ($r = 0.138$; $p < 0.05$) with comments; and, finally, post appeal ($r = 0.353$; $p < 0.001$) and videos ($r = 0.144$; $p < 0.05$) with shares.

Regarding Instagram, the single significant positive correlation was found between post appeal ($r = 0.212$; $p < 0.05$) and likes; no other variable was related to either likes or comments.

It should be noted that all the relationships found between the variables were classified as either low ($0.2 \geq r < 0.4$) or very low ($r < 0.2$) intensity, according to the scale of Bryman and Cramer [3].

40.5.4 Multiple Linear Regression Models of the Key Dimensions of Customer Engagement (Likes, Reactions, Comments, Shares) on Facebook and Instagram

The model for the number of likes on Facebook is significant as a whole ($F(5,252) = 5.372$, $p < 0.01$) and has an explanatory power of 7.8% ($R^2 = 0.096$, R^2 adj. $= 0.078$). Concerning post appeal, a positive effect was found on the number of likes ($\beta = 0.274$; $t = 4.300$; $p < 0.001$). The model for the number of reactions on Facebook is also significant as a whole ($F(5,{}_{252}) = 9.518$; $p < 0.001$) and the variables included explain in 14.2% the number of reactions a post gets ($R^2 = 0.159$, R^2 adj. $= 0.142$). The post appeal was found to have a positive effect on the number of reactions ($\beta = 0.328$; $t = 5.340$; $p < 0.001$), as well as using images ($\beta = 0.279$; $t = 3.138$; $p < 0.05$). Regarding the comments model on Facebook, which is significant as a whole ($F(5,{}_{252}) = 5.203$; $p < 0.001$), it was possible to verify that the variables have an explanatory power of 7.6% of the number of comments that a post gets ($R^2 = 0.094$, R^2 adj. $= 0.076$). Post appeal ($\beta = 0.163$; $t = 2.559$; $p < 0.05$) and images ($\beta = 0.294$; $t = 3.182$; $p < 0.05$) were found to have a positive effect on the number of comments a post receives. The last model regarding Facebook is the shares model, which is also significant as a whole ($F(5,{}_{252}) = 8.341$; $p < 0.001$) and has an explanatory power of 12.5% ($R^2 = 0.142$, R^2adj. $= 0.125$). Both the post appeal ($\beta = 0.326$; $t = 5.248$; $p < 0.001$) and the video format ($\beta = 0.195$; $t = 2.194$; $p < 0.05$) positively impact the number of shares a Facebook post gets.

Regarding Instagram, the model for the number of likes is also significant ($F(4,{}_{189}) = 2.655$; $p < 0.05$), presenting an explanatory power of 3.3% ($R^2 = 0.053$, R^2 adj. $= 0.033$%). The post appeal is the only variable that shows a positive, significant effect in the number of likes on Instagram ($\beta = 0.214$; $t = 2.995$; $p < 0.05$). The model for the number of comments on Instagram was not significant ($p > 0.05$), reason why it is not possible to analyze the results.

The fact that the post appeal is positively related to all the metrics means that the emotional post appeal has more influence on customer engagement than functional post appeals. This proved true for both social media platforms.

Images are the post type that promote engagement the most, specifically in the forms of reactions and comments on Facebook. The video format however seems to be the post type that generates more shares.

Evidences were not found that the interactive elements and time frame (weekdays or weekends) of the posts influence any of the customer engagement metrics included.

40.6 Discussion and Conclusions

40.6.1 Main Findings

The first goal of this research was to understand the relationship of the determinants of customer engagement and its dimensions on Facebook and Instagram. It was discovered that the post appeal is significantly related to all the metrics (likes, reactions, comments, and shares), except comments on Instagram; that post type is significantly related to all metrics except likes and comments on Instagram; that interactivity is related to the number of comments on Facebook; and, finally, that time frame was not significantly related to none of the metrics.

The second goal of this study aimed to assess the impact of the determinants of customer engagement on the social network's dimensions. The results show that post appeal impacts all the dimensions of customer engagement (likes, reactions, comments, and shares) and that emotional post appeals promote higher engagement levels, comparing to functional appeals. It can also be concluded that using images generates more reactions and comments, and that the video format seems to get more shares on Facebook. Lastly, no evidences were found that interactivity and time frame impact likes, reactions, comments, or shares on either Facebook or Instagram.

This research's third goal was to identify which of the determinants of customer engagement were used the most by brands on Facebook and Instagram. The results showed several commonalities between them: Images are the most common post type; there are more posts being published on weekdays; and non-interactive posts prevail over interactive ones. The one difference that was found concerned the post appeals: on Instagram, emotional appeals are used more often than functional ones, while the opposite happens on Facebook.

40.6.2 Contributions of the Study

The contributions of this study to the academic, and practitioner, concern customer engagement on social media and have emerged from the recognition of some gaps on the literature.

Following future research directions from Balio e Casais [1], this study aimed at contributing to their framework by: (1) enlarging the sample of companies under

study, i.e., while the authors analyzed one single brand, this study included 11 brands from different industries; (2) collecting a vast number of posts, both on Facebook and Instagram. Hence, this study collected 194 Instagram posts, tripling the amount of data gathered for this platform; (3) including functional appeals and emotional appeals, hence answering to the research gap put forward by the authors.

The major theoretical contribute of this research is, however, the fact that it incorporates dimensions of several studies on its framework, which provides a wider view on the topic and adds updated results to each. For example, the results found supported the work of Cvijikj and Michahelles [6], showing that emotional appeals are the most significant promoter of customer engagement on social media. They also support the findings of Balio and Casais [1] regarding images promoting reactions and comments on Facebook. The video format was found to increase the number of shares on Facebook, being partially in accordance with the authors, who reported that this format increases all metrics. The results from this research showed that the video format generates a higher number of shares on Facebook, but not of all metrics as proposed by Balio and Casais [1]. Still regarding post type, no evidences were found that images promote more likes on Instagram, as revealed by the authors' work.

Regarding time frame, this study's results do not support the findings that engagement is higher on workdays [6], or that time frame influences any metric at all.

Lastly, no evidences were found to support that interactivity influences any of the customer engagement metrics on Facebook [1, 6].

Regarding practical contributions, this research recommends brands and professionals to post content on Facebook and Instagram that provokes their audience's emotions. Associating feelings with the consumption of a product or service is a powerful way to improve customer engagement on social media, as well as using mostly the image post type on Facebook (and videos if the goal is achieving a higher number of shares).

40.6.3 Limitations and Suggestions for Future Research

This study's limitations are primely related to time constraints and the fact that the brands that were analyzed operate in very different industries. As such, it would be interesting to widen the time period of the data collection and to analyze several brands within the same industry, which would eliminate industry-wise differences. It would also be interesting to include more specific types of post appeals on future studies and to analyze reactions further, which represent a great metric to describe consumers' feelings. This study showed that there are differences between the platforms analyzed, Facebook and Instagram, which raises the question of how customer engagement varies across other social media platforms. Therefore, a future research direction would be to analyze social networks such as LinkedIn, Pinterest, Twitter, and TikTok.

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Chapter 41
Communication in Times of Pandemic: Analysis of Engagement on Social Networks

Sandra Miranda and Jaqueline Dias

Abstract The strong growth of social networks and the content generated by them is a growing tide that has come to stay. This change prompts structural changes and is forcing companies, institutions and brands to adapt their strategies. Organizations must consider their customers to be active partners, developing with them a new relationship pattern and using differentiated strategies to elicit attitudes, behaviors and, above all, more favorable connections. From the universe of brands, Super Bock was the brand selected, based on RankUPT, a statistics Web site aimed at the analysis of Facebook's activity in Portugal. RankUPT makes a daily measurement of home-pages, based on the number of fans. A netnographic study was conducted, through a non-interventionist observational technique, added to a collection of qualitative behavioral data which took place between March and May 2020 (the population's confinement period due to the COVID-19 pandemic), and also considering the use of secondary data for the descriptive analysis of the brand in question. Metrics used for measuring engagement were the most commonly used in other studies (e.g., likes, sharing, commenting), along with the Malhotra et al. (MIT Sloan Management Review 54:17-21, 2013 [5]) criteria for the drivers of engagement. The results are discussed, and the academic and business implications of the study are examined, in particular for branding and relationship marketing.

41.1 Introduction

The evolution of the new Information and Communication Technologies (ICT), with particular emphasis on the development of the World Wide Web and the expansion of a Network Society model, has led to the transformation of various activities and has given new technologically more advanced societies to new technologically advanced societies communication opportunity, improving the speed and efficiency of information processing and transmission, reducing the spatial distances

S. Miranda (✉) · J. Dias
Escola Superior de Comunicação Social—Instituto Politécnico de Lisboa, Campus de Benfica, 1500 Lisboa, Portugal
e-mail: Smiranda@escs.ipl.pt

that created constraints to the development of these activities beyond the local sphere. It is a new model of society that chooses technology as an aggregating element and information as raw material for the creation of knowledge—an intangible and immaterial strategic asset that has become fundamental for the production of wealth and that contributes to the life of citizens, companies and brands [1].

Constant technological developments have accelerated the speed of access, navigation, production and content sharing, as well as the creation of communities allowing networks to become platforms for interaction and for users—formerly passive recipients, to define through their opinions and actions what gains relevance in the network. It is undeniable that we are facing an increasingly dynamic information society [2], an increasingly technological company and an increasingly informed, empowered and ubiquitous user, who seeks experiences and who connects and disconnects from brands due to interaction and the depth of the dialog [3].

In this context, the strong growth of social networks and the content generated is presented, not as a passing trend, but as a rising tide, causing structural changes and requiring companies and brands to understand it and adapt their strategies by passing to face their audiences/users as active partners, developing a close, collaborative, intensely relational relationship with them, reinforcing and strengthening emotional and cognitive bonds and links, that is, engagement. In essence, it is about navigating the most opportune and least intrusive environment of social media, strengthening relationships, aiming at stronger relationships that result in positive responses. Among the vast set of social networks, Facebook is undoubtedly the best known and the most used, remaining in the lead due to its immense potential for use and, therefore, the preferred target of a vast and dissimilar list of entities (such as companies, brands, political parties, religious organizations, non-profit associations and security forces [4]).

With the rapid growth of social networks sites (SNSs), academic researchers on the topic have struggled to keep pace and several research streams have emerged although the authors have failed to fully understand the dynamic, communal and highly social advantages of SNS communications for relationship-oriented consequences.

In order to fill this academic literature gap and given the strategic importance to brands to keep customers engaged, the current study focuses on validating the engagement drivers on Facebook brand pages as proposed by Malhotra et al. [5]. The brand under study is Super Bock Portugal, during the confinement period due to the COVID-19 pandemic. Based on our study findings, we hope to positively contribute to academic research and to provide guidelines to help advertisers and their brand communicators address consumers' needs and interests and to capitalize on the interactive, communicative, and collaborative characteristics of SNS.

41.2 Companies, Brands and Consumers: New Relationship Paradigm

The breakneck pace of changes and the resulting crises have prompted new challenges on how companies, organizations and brands should manage their tangible and intangible resources. The management approach, merely focused on transactions, gave rise to a new and emerging approach, markedly relational and individualized, oriented toward building long-term relationships [6], based on the conviction that the new approach would produce positive results, especially in terms of satisfaction, consumer confidence and loyalty [7].

This is a clear paradigm shift that is rooted in relationship marketing, since, in the words of Gummesson [8], the previous concept of (transactional) marketing has exhausted all its capacity to adjust to the peculiarities of the new environment and of the new consumer. He believes that is necessary to establish and develop a new approach, whose pillars must be the following: the relationship and orientation toward the creation, maintenance and development of relationships with customers and consumers. The interactivity of the parties—the relationships between companies, brands and consumers for the creation and mutual delivery of value—requires a close and intense communication process between both. Creating, maintaining and developing relationships require a long time span.

In fact, the turning to the relationship path presents itself as a viable and strategic solution that companies, organizations and brands—in an era dominated by the internet, and given the exponential weighting of the consumer and the widespread loss of control of information about the brands—getting closer to the consumer, getting to know their feelings, beliefs, opinions and their needs better, establishing an active and direct communication with customers, thus reinforcing their indispensability.

It should be noted that, despite its contemporaneity [9], the relationship dimension had already been mentioned by Leonard Barry, in 1983, when in his book Relationship Marketing he speaks of a new way of attracting, maintaining and strengthening relations with customers. Since then, this perspective has been developed and refined by different researchers [10, 11], although all reiterating the idea that it is a philosophy that aims at creating and maintaining close and collaborative relationships with the public. With the emergence of the Internet, and with the establishment of Web 2.0, the relevance of relationship marketing gained a particular élan since it became vital for the survival of organizations to establish a close and long-term relationship with consumers. It is not just about obtaining economic dividends; it is also about creating bonds and engagement, an intimate and close connection with consumers, making them "owners" and ambassadors of the brand and the company.

41.2.1 Engagement on Social Networks

It is undeniable that the establishment of Web 2.0, not only transformed the role and power of the consumer to participate and co-create, but it also was configured as an opportunity for companies, organizations and brands to publicize their products, their actions and their ideas. In this context, the communities of brands, forums, blogs and social networks are seen as starting points, marked as the key part of the process, due to the possibilities of creating engagement, since they appear as new communication channels that require new forms of interaction, socialization and demonstration of affiliation [12].

In fact, although it is not a recent concept, having been widely debated in the last decade, [13–16], it is only recently that the concept of engagement has gained attention and a prominent place in marketers' agendas and in respective specialty literature [17].

The results achieved derive largely from the urgent need to find an indicator that recognizes that relations between companies, institutions, brands and their audiences evolve according to experiences and according to the depth of the dialog [18], as of the emotional and rational ties established [19]. In addition, engagement is currently considered "a driving force behind postmodern consumer behavior and the decision-making process" [20], as despite the multiplicity of brands that abound, the consumer only establishes a connection with a very small portion of them.

For Calder et al. [21], it is about connecting audiences and brands in order to allow and establish a dialog and a continuous and interlocked interaction in both directions, co-creating value; thinking of brands as experiences and giving the public the opportunity to experience them with content, information and amplification. Hollebeek et al. [22] provide a definition of the construct, fully focused on the context of social networks, being pointed out by the specialty literature as a paradigmatic example of an integrating proposal: "it is the level of cognitive, emotional and behavioral investment during a focal interaction with a brand, organization or community"(p. 6).

In this context, the communities of brands, forums, blogs and social networks are seen as starting points, marked as the key element of the process, due to the possibilities of creating engagement, since they appear as new communication channels that require new forms of interaction, socialization and demonstration of affiliation [23].

In social networks, the creation of engagement implies the establishment of relationships between the brand (company/organization) and the user through a page or profile [24], and it happens "almost instantly," which can be characterized by acts such as making likes, commenting and sharing a publication, leaving the brand (company/organization) to interact with its followers, for example, responding to comments, publishing videos, encouraging acts such as likes, shares and comments. De Vries et al. [25], when referring to the intensity of engagement, state that, in most social networks, of all possible actions, commenting and sharing are signs of greater engagement and value on the part of followers.

To that end, and using the literature review on the predictors of engagement in social networks, Long [26] and Hellberg [27] show that interesting, relevant, simple and unique content has a positive effect on engagement.

Palmer and Koenig-Lewis [28], from an investigation carried out on Facebook, say that more important than naming and scrutinizing, the attributes of the brand or product are to create content that consumers identify with, using publications that create nostalgia, that have some intrinsic humor, that associate themselves with a lifestyle, or that present the backstage and frontstage of the entity's activities.

For Mangold and Faulds [29], promotions, discount offers, creation of events, contests and specific hobbies for community members are also important to increase engagement levels. Gensler et al. [30] defend the importance of using people in publications, either through original photos of the brand, or through sharing photos of other people. It follows that when adopting assertive strategies in the conduct of the social networks associated with the brand, company or organization, such spaces enjoy the support of Internet users. The higher the level of engagement, the greater the interaction.

Also, Malhotra et al. [5] sought to realize—through a comparative analysis—the reason why some brands could get greater engagement on Facebook. By analysing more than 1000 posts concluded, there are seven preferred predictors of likes, comments and shares made by fans, which are: brand communication—promoting the brand, its products and sharing the successes and achievements of the brand; providing informative value about the history and profile of the brand; using humor—posting messages and humorous images; humanization of the brand—depicting the mark as an object with life and emotion it was; request likes—asking directly and objectively likes the posts that are placed on the page; communication and promotion of related events and associated with the brand and posting images and multimedia elements. Thus, the versatility and consistency of the proposed Malhotra et al. [5], applied to Facebook, derive the following research hypothesis:

> H1: The involvement of consumers with brands on Facebook, such as the (a) number of likes; (b) number of shares and (c) number of comments, is dependent on the inclusion of messages that appeal to images and multimedia elements in a publication.
> H2: The involvement of consumers with brands on Facebook, such as the (a) number of likes; (b) number of shares and (c) number of comments, is dependent on the inclusion of messages that appeal to events in a publication.
> H3: The involvement of consumers with brands on Facebook, such as the (a) number of likes; (b) number of shares and the (c) number of reviews, is dependent on brand communication in a publication.
> H4: The involvement of consumers with brands on Facebook, such as the (a) number of likes; (b) number of shares and (c) number of comments, is dependent on the inclusion of messages that appeal to the success of the brand in a publication.
> H5: The involvement of consumers with brands on Facebook, such as the (a) number of likes; (b) number of shares and the (c) number of comments, is dependent on the inclusion of additional information in the mark publication.

H6: The involvement of consumers with brands on Facebook, such as the (a) number of likes; (b) number of shares and (c) number of comments, is dependent on the inclusion of messages that appeal to humanization of the brand in a publication.

H7: The involvement of consumers with brands on Facebook, such as the (a) number of likes; (b) number of shares and (c) number of comments, is dependent on the inclusion of humor messages about the brand in a publication.

H8: The involvement of consumers with brands on Facebook, such as the (a) number of likes; (b) (c) number of shares and number of comments, is dependent on the request for likes contained in a publication.

41.3 Methodology

The method selected for this research is netnography, which Kozinets introduced in the late 1990s. Netnography is a qualitative research methodology, which adapts ethnographic research techniques to the study of computer-mediated social interaction [31]. The process of netnography uses publicly available information found in online context which was deemed as an appropriate non-participatory observation method to gather information on brand activity and consumer interaction.

For the purpose of the study, the Super Bock brand was selected. The Super Bock Group is a refreshing beverage company, based in Portugal. Its strategy is focused on selling bottled waters, beers, ciders, sodas, among other products. The Super Bock brand was created in 1927. The products are distributed not only in Portugal, but also in other European countries and in Latin America. The company directs its message toward young, hip audiences and promotes events such as Super Bock Super Rock, a music festival which first took place in 1995.

According to the latest study "Portuguese and Social Networks in 2019" by Marktest Consulting, Facebook is the most popular social network in Portugal, the most used, the most interesting and also the most addictive. This is the reason that led the investigation team to analyze the Facebook page of Super Bock Portugal.

The independent variables are the drivers of engagement proposed in our research model and are operationalized as categorical data assuming the value "1" for "yes" and "zero" for "no." Nominal data was collected manually for each driver based on the content analysis of each publication. The next table presents the set of engagement drivers [5] (Table 41.1).

The dependent variable is the engagement operationalized by three metrics, number of likes, shares and comments as proposed in the research model. Data was manually collected for each post. Postings and respective data were collected from the March 1 until the May 30, 2020 that resulted on a total of three months and of 46 publications.

Table 41.1 Drivers of engagement

Variabel label	Concept (Malhotra et al. [5])	Example
Multimedia	Including pictures/videos	The posting has photos and/or videos
Events	Messages referring holidays, festivals, important dates, etc	The publication is associated with an event
Brand	Promoting brand and products	Postings with marketing information related to products
Success	Sharing success stories, achievements, awards, etc	The publication reports a success of the brand
Information	Creating informational value for fan's enrichment and education	The publication is on additional matters (or not) of the product
Humanization	Sharing posts that contain emotions	The publication is like a conversation between friends
Humor	Posts with humorous messages/pictures	The publication is funny; makes you laugh (e.g., a joke)
Likes	Ask directly to be liked	The publication calls for a "Like"

41.4 Results Analysis

This article had as a source of observation the Facebook of the company Super Bock, in Portugal. As said before, the investigation covered the months of March, April and May 2020, and the information was collected between May 5 and June 10, 2020. The company has 818,925 people who like the page and 820,688 followers. Data collection resulted in the analysis of 46 posts; of this group, 13 of them occurred in March, 17 in April and the remaining 16 in May. Altogether, 141,437 likes, 6,783 comments and 21,094 posts were shared.

It was possible to conclude that the brand did not present regularity in the volume of posts, with a gap of up to six days between communications or a maximum of two publications on a single date. In 63.05% of the posts, the page brought information to followers from routes and gastronomic combinations to awareness actions. It was also found that the brand resorted to the continuous use of images and/or videos in its publications, adding up to around 98% of the total, a strategy already rated as effective [5]. Just as the adoption of multimedia elements is regular, the presence of the Super Bock logo appears in 44 of the 46 posts, including actions to support philanthropic entities in the fight against the Coronavirus, as will be discussed later.

The first post linked to the context of COVID-19 was held on March 15, stimulating a "Round of applause for those who save lives." Half of all posts made between the months of March and April (15) resorted to humanization, highlighting initiatives to assist health professionals, the delivery of essential goods and the production of protective masks and hand sanitizing gel. The same pattern could be noticed in May, with eight posts following a line of communication aimed at humanization, with requests from volunteers to ensure the functioning of the emergency shelters or the

planning of a contest to encourage the decoration of windows or balconies for the festivities of popular saints that, due to the Coronavirus, were canceled from the north to the south of Portugal.

April can be considered the period with the greatest number of actions aimed at humanization. Of the total posts made that month (17), in 11 of them the page made its information feed available only to search or list initiatives that needed support in facing COVID-19, reiterating the fact that, through social networks, it is possible to overcome physical and geographical barriers [32]. It is also important to note that, in the period of time analyzed, of the 20 posts that sought interaction on the part of consumers, only three of them were strictly directed to the brand's commercial purposes.

In numerical terms, the posts with the largest volume of likes, comments and shares were the post in which the brand announced that the alcohol removed in the production of Super Bock Free Without Alcohol would be destined for the production of disinfectant gel to be offered to hospitals. About 32% of all interactions obtained by the brand during the analyzed period came from this post. The second best record was also linked to an action to confront COVID-19, in which the same beer came to be called "Super Doc," a tribute to health professionals. The posts had almost 15.000 thousand interactions, which corroborates the fact that the addition of the "Humanization" factor to the brand creates an identification with consumers and encourages transmission to their own network of friends [5]. All the analyzed posts obtained positive adherence by the followers of the pages.

Although the brand has given space in its news feed to portray and assist in coping with a global pandemic, it has maintained its visual identity, preserving the continuous use of red and white colors, strongly linked to the Super Bock logo; playfully using beer bottles to convey different messages (see Fig. 41.1) and applying strategies that encompassed humor in almost 45% of publications, a characteristic of the brand on Facebook and positive feedback from followers, as attested earlier [5].

To validate the hypotheses of our theoretical model, we used the chi-square test. It is a non-parametric test used to determine whether two variables are independent or not. Table 41.2 presents the results of hypothesis testing and their validation.

41.5   Discussion of Results

The decision by Super Bock brand managers to open up their Facebook page to humanitarian organizations during the pandemic appears to have been both effective and good for the brand. An evaluation of the numbers obtained shows that the adoption of actions aimed at humanization produces positive results on the part of consumers. 66.63% (112,821) of the total number of interactions examined (169,314) took place in posts where Super Bock products were not being promoted. Those posts related to fighting Coronavirus and helping philanthropic entities were dominant in interactions, 63.39% (107,342).

Fig. 41.1 Post related to the accommodation movement for health professionals

The positioning more focused on humanization is in line with the global context experienced today. The arrival of the Coronavirus pandemic has plagued countries as a whole, leading to the closure of commercial establishments and borders in order to contain the spread of the virus, changing the global configuration and the form of connection between people around the world. To give an idea, according to information from the National Health School [33], made available by the National Health Service, Portugal had, on July 7, 2020, a total of 44,129 registered cases and 1,620 deaths occurred in several regions from the country. The same study showed that, for more than 80% of the interviewees, the perception is that life will return to normal in no less than three months.

Super Bock's strategy of adapting its communication on Facebook and directing part of its corporate efforts to facing the pandemic (e.g., providing support information and assisting in the search for volunteers) confirms the proposed hypotheses. The numbers showed that the brand posts that adopted the appeal of humanization and information had all the hypotheses supported, and the number of likes, shares and comments is dependent on the addition of this information. The same conclusion was reached with the addition of the brand in the posts, which, once again, all supported hypotheses. This shows that, through the creation of informative value and the brand positioning on Facebook—which uses the platform not only as a means of communication, but also as a means of proximity and adding value to its followers

Table 41.2 Hypothesis test and results

	H1	H2	H3	H4	H5	H6	H6	H7
	Photo/Video	Events	Brand	Success	Information	Humanization	Liked	Humor
(a) Likes	$\chi 2 = 12,416$; df $= 5$; p-value $= 0.019 < 0.05$ (*) No. of likes and photo/video can be associate H1a) not totally supported for $\alpha = 5\%$	$\chi 2 = 11,411$; df $= 5$; p-value $= 0.019 < 0.05$ No. of likes and events are dependent H2a) supported for $\alpha = 5\%$	$\chi 2 = 1,560,757$ df $= 5$; p-value $= 0.000 < 0.05$ No. of likes and brand are dependent H3a) supported for $\alpha = 5\%$	$\chi 2 = 7.342$; df $= 5$; p-value $= 0.124 > 0.05$ No. of likes and success are independent H4a) not supported for $\alpha = 5\%$	$\chi 2 = 13,333$; df $= 5$; p-value $= 0.009 < 0.05$ No. of likes and information are dependent H5a) supported for $\alpha = 5\%$	$\chi 2 = 33,623$; df $= 5$; p-value $= 0.000 < 0.05$ No. of likes and humanization are dependent H6a) supported for $\alpha = 5\%$	$2 = 6.539$; df $= 5$; p-value $= 0.177 > 0.05$ No. of likes and likes are independent H8a) not supported for $\alpha = 5\%$	$\chi 2 = 6.684$; df $= 5$; p-value $= 0.168 > 0.05$ No. of likes and humor are independent H7a) not supported for $\alpha = 5\%$
(b) Shares	$\chi 2 = 1.313$; df $= 2$; p-value $= 0.442 > 0.05$ No. of shares and photo/video are independent H1b) not supported for $\alpha = 5\%$	$\chi 2 = 0.108$; df $= 2$; p-value $= 0352 > 0.05$ No. of shares and events are independent H2b) not supported for $\alpha = 5\%$	$\chi 2 = 67,019$; df $= 2$; p-value $= 0.000 < 0.05$ No. of shares and brand are dependent H3b) supported for $\alpha = 5\%$	$\chi 2 = 42,018$; df $= 2$; p-value $= 0.123 > 0.05$ No. of shares and success are independent H4a) not supported for $\alpha = 5\%$	$\chi 2 = 13,524$; df $= 2$; p-value $= 0.002 < 0.05$ No. of shares and information are dependent H5b) supported for $\alpha = 5\%$	$\chi 2 = 9.507$; df $= 2$; p-value $= 0.015 < 0.05$ No. of shares and humanization are dependent H6b) supported for $\alpha = 5\%$	$\chi 2 = 2.313$; df $= 2$; p-value $= 0.299 > 0.05$ No. of shares and liked are independent H8b) not supported for $\alpha = 5\%$	$2 = 7.406$; df $= 2$; p-value $= 0.687 > 0.05$ No. of shares and humor are independent H7a) not supported for $\alpha = 5\%$

(continued)

Table 41.2 (continued)

	H1	H2	H3	H4	H5	H6	H6	H7
(c) Comments	$\chi 2 = 1.176$; df $= 2$; p-value $= 0.454 > 0.05$ No. of comments and photo/video are independent H1c) not supported for $\alpha = 5\%$	$\chi 2 = 2..254$; df $= 2$; p-value $= 0.207 < 0.05$ No. of comments and events are independent H2c) not supported for $\alpha = 5\%$	$\chi 2 = 81,945$; df $= 2$; p-value $= 0.000 < 0.05$ No. of comments and brand are dependent H3c) supported for $\alpha = 5\%$	$\chi 2 = 14,136$; df $= 2$; p-value $= 0.000 < 0.05$ No. of comments and success are dependent H4c) supported for $\alpha = 5\%$	$\chi 2 = 6.815$; df $= 2$; p-value $= 0.035 < 0.05$ No. of comments and information are dependent H5c) supported for $\alpha = 5\%$	$\chi 2 = 35,342$; df $= 2$; p-value $= 0.000 < 0.05$ No. of comments and humanization are dependent H6c) supported for $\alpha = 5\%$	$\chi 2 = 1.011$; df $= 2$; p-value $= 0.611 > 0.05$ No. of comments and liked are independent H8c) not supported for $\alpha = 5\%$	$\chi 2 = 0.403$; df $= 2$; p-value $= 0.767 > 0.05$ No. of comments and humor are independent H7a) not supported for $\alpha = 5\%$

and to society—it is possible to contribute so that clients have an interest in sharing their emotions, including in their personal network of friends [5].

However, not all hypotheses were confirmed and proven to be predictors for creating Super Bock engagement on Facebook. Humor-oriented messages and request for likes in posts were not supported as was expected; they were not confirmed by the chi-square test.

The addition of images and videos may be related to the likes received by the brand, but it was not fully supported by the hypotheses, while the shares and comments are independent. Similar to the addition of multimedia resources, the inclusion of events and the volume of likes are dependent; however, shares and comments are independent. Finally, in opposition to the two predictors mentioned above, when the brand adds posts linked to the success of the brand, the number of likes and shares is independent, not creating greater interaction on the part of the followers, while the comments are influenced and there is more engagement when positive aspects are added to the brand.

41.6   Conclusions

The deepening in the study of art and the execution of the analyzes proposed in this article sought to show how the Internet, with an emphasis on social networks, promotes and facilitates the access of brands to their consumers, contributing especially to the connection and feedback between the parties involved. However, it is important to note that the social media environment is a space in constant evolution, which requires brand managers to continuously adapt [5, 19].

In this way, it is possible to perceive that the inclusion of humanization had a significant impact on the result of consumer engagement with the Super Bock brand, endorsing studies previously presented [5]. Resuming the number of shares counted in just three months of analysis (21,094), for example, it is noticeable that consumers manifest themselves as brand ambassadors, when sharing the materials produced by Super Bock on their social networks [19].

One of the most relevant points attributed to the analysis is perhaps the fact that humanization, in addition to being supported by hypotheses, endorses that the promotion of emotional ties reinforces feelings of participation and involvement of consumers [19]. The search for engagement is an intelligent artifice since, in an environment dominated by a large volume of information and brands, it is necessary to adopt innovative strategies that can prove effective for the survival of brands. In this context, brand communities can and must become allies, becoming an environment in which their members can express themselves [32].

By using content in which consumers are part of the process and are not just spectators—as, for example, when requesting the indication of initiatives that needed support in combating COVID-19—the brand raises greater involvement of its followers and it overcomes physical, time and space barriers, as well as fosters

and strengthens the interaction and loyalty of those involved in the process [4, 19, 32].

41.6.1   Limitations and Suggestions for Future Investigations

It is believed that this article provides insights into the literature on engagement and its predictors on social networks. Nevertheless, the study has limitations regarding the process, namely the collection of information supported by only one brand, the absence of comparisons of it on different platforms—Super Bock still has, in Portugal, pages on Instagram, Twitter and YouTube—as well as the comparison with other companies in the same sector. It is still necessary to emphasize the abbreviated time of the study, 90 days. It is also relevant to point out that due to the absence of internal metrics from Super Bock, this article cannot guarantee the success of the applied actions, especially with regard to the demands related to COVID-19. It is not clear whether brand positioning aimed at humanization resulted in greater traffic on the brand's Web site or in increase sales.

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Chapter 42
Digital Marketing Strategies for Local Accommodation Establishments Is It Really Important?

Rui Augusto da Costa and **Raquel Seabra**

Abstract Tourism is one of the economic sectors where information has an essential function and where the impact of social media had more relevance. Today's digital world has transformed corporate communication as well as its strategies. Digital technologies are increasingly present in our life (social, professional, and personal) and have radically changed the way people think, make decisions, and interact. Consumers are more demanding and informed, supporting their buying decisions in the online world, becoming more flexible (more spontaneous, hybrids, technology fans), more experienced (informed, active), more independent (more adventurous and involved), with new values (seeking unique, more real and authentic experiences), new lifestyles (more free time, travel more, preference for short breaks) and have undergone demographic changes (more singles, smaller families). These changes also have implications in the tourism sector and in the marketing strategies of tourist destinations. Given this new paradigm, the local accommodation units, as the most recent type of accommodation in Portugal, have registered a remarkable growth in the last years and due to the characteristics of the activity itself (more adaptable and personalized) should adapt to these new realities. The main objective of this research is to analyze, from a business perspective, the importance of digital media in local accommodation establishments' communication strategies with central focus in the city of Aveiro. To achieve this goal, an online survey was carried out to all entrepreneurs of the local accommodation establishments, obtaining a 46% response rate. One of the main conclusions shows that these local accommodation entrepreneurs use the digital world to advertise their services, boost reservations and sales, increase customers and communicate with them. However, few companies are using the digital world to analyze demand, to create a closer relationship with the customer, and to increase brand confidence/awareness.

R. A. da Costa (✉) · R. Seabra
Department of Economics, Management, Industrial Engineering and Tourism, University of Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal
e-mail: rui.costa@ua.pt

R. Seabra
e-mail: raquelseabra@ua.pt

42.1 Introduction

Tourism is one of the economic sectors in the world where information stands out as one of the most important factors, being, therefore, one of the sectors where the greatest impact was felt with the evolution of the new reality of digital marketing.

Currently, due to the increasing use of the Internet and, mainly, due to the exponential growth in the use of social media applications, there are significant changes in the promotion of tourist destinations, with a clear strategy for them to use the content generated by users on the Internet.

Traditionally, the promotion of tourism was done through conventional media and using traditional tour operators or travel agencies. Nowadays, this trend has been decreasing, since consumers/tourists prefer to obtain the information they need online, using social media Web sites and search engines [1]. These applications allow potential tourists to obtain the desired knowledge from different sources, as well as take advantage of the experiences of others, to derive advantages for their own tourist experience. Thus, the tourism industry moves from a labor-intensive industry to an information-intensive industry.

In recent years occurred an exponential growth of local accommodation units mainly due to the ease of contact between citizens around the world brought by the internet. If, before globalization, this phenomenon represented only a marginal fringe of the tourist flow, today it must be a real competitor to traditional hotels, with increasing weight in the total of the sector.

The Internet has facilitated access to information and, equally, the development of relationships between users. Social networks as a means of communication have enabled communication between users to be simplified and more effective [2]. On the other hand, the presence on social networks presents itself as a key means for brands/companies to increase their notoriety, as well as to develop a relationship with consumers [3], all at a reduced cost, which will increase revenues and stimulate innovation in brand communication.

Social networks have revolutionized business and the way people and brands/companies communicate with their targets, which leads us to believe that the way a business can grow quickly will be enhanced with its presence on social networks. In reality, as [4] refers, with the popularization of the use of social networks by companies, there was a profound and marked transformation in the way of conducting business, in the transactions carried out, in advertising by brands, as well as product offerings.

The present study, therefore, has the central objective of analyzing, from the business perspective of the local accommodation units in the city of Aveiro, the influence of digital marketing in the communication and promotion of their services and to understand how they use the Internet, and in particular the applications of social media in their communication strategies.

42.2 Literature Review

42.2.1 The Importance of Digital Marketing for Tourism and Hospitality

The development of information and communication technologies (ICT) was brought about by the appearance of the Internet, which led to an abysmal impact on the way communication is carried out in the present. From another point of view, these new media have changed and revolutionized the design and management of marketing strategies for a given business. Yannopoulos [5] states that it is crucial, for the success of a business, to understand the functioning of the media present on the Internet, since this will prove to be decisive to obtain a competitive advantage to its competition.

New technologies have transformed not only the way of running a business but have also changed, profoundly and decisively, traditional marketing strategies. In this sense, because of the emergence of new digital means of communication, the relations between consumers and brands have suffered strong impacts and changes. Thus, as stated by Edelman [6], brands and consumers started to connect, significantly, through social media channels.

Since the mid-1990s, businesses/activities in the tourism and hospitality sector started using the Internet, considering it as a distribution channel, and likewise, as a marketing tool or for commercial purposes [7].

ICT has intensively influenced and changed the tourism sector [8]. This technological age has developed a means of communication that enables contact with the world (people, moments, and places), eliminating the barriers that existed in communication. Therefore, a positive development in the performance and quality of the service provided is expected, as well as the optimization of operational efficiency so that costs are increasingly lower [8]. Thus, according to Xiang et al. [7], ICT showed an advance in the way travelers' access and enjoy information related to travel, admitting that they, through social networks, share their experiences. From another point of view, from social networks, hotels can carry out online campaigns through paid advertising, promoting their services, and managing their reputation [9].

With increasingly strong, dedicated, and greater competition in the tourism and hospitality sector, operators in this industry must recognize the relevance of outlining marketing strategies, with a view to the public's visibility and defining an appropriate position vis-à-vis the rest of the competition [10], something that digital tools can provide more quickly and effectively.

42.2.2 Social Media in Tourism and Hospitality

Social media is one of the most important promotional tools for tourism, taking into account that if used properly (i.e., based on a specific strategy and marketing

plan), they can meet the needs of online customers and transform them into potential customers. A hotel can, for example, attract customers by enhancing the special characteristics of the landscape, where it is located in social media and attract the customer's interest using photographs. Also, social media are linked to the concept of innovation, since a company can use them to promote its innovative suggestions and activities to the public [11].

However, when referring to social media, though, for example, social media platforms, from which the promotional message is transmitted, the interest is not only focused on communicating the message using the traditional way of sharing, but also in several other tactics, such as the paid ads that these platforms make available for a company to reach the largest possible audience.

Kavoura [12] describes digital advertising as a fast and low-cost way for a company to reach its audience, either for the promotion of brands or for the promotion of products and services. What is interesting about digital advertising is the element of interactivity, the online relationship that is built with the customer and the possibilities offered to the customer to participate in online advertising campaigns in various ways, such as online special offers, contests, among others, for online customer service, making use of various applications/tools, such as online chat, which help to build a relationship with the customer, that is, relationship marketing [13].

In recent years, tourists increasingly use social media as a tool for market research. Kavoura and Stavrianea [14] describe that tourists are eager to belong to an online travel community that will allow them to share experiences and ideas with other members online. However, these online communities cannot be found only in social media, but also on several other interactive Web sites that provide the information required by tourists.

Social media is no longer just a place to meet friends or a place to make new friends; it plays a crucial role in user travel, from trip planning to sharing the experience. In the past, the holiday destination was chosen through the catalogs of tour operators and the trust in travel agents. That has changed; now people search the Internet for all the information about the place or places they want to visit before traveling and often look for suggestions of places to go on vacation, thus creating the vacation package that satisfies them.

According to Afonso and Borges [15], social networks are a channel for the distribution of information for a hotel, as well as a challenge and opportunity. It is essential to study, reflect, and analyze strategic and operational objectives when intending to create a social network. It is important to define the segments, the target, the objectives, the message to be transmitted, and to have control over it. A strategy defined by a marketeer is needed to identify where potential customers are and what is the best way to communicate with them.

42.3   Methodology

The main objective of this research is to understand and evaluate the importance and level of use of social media by entrepreneurs of local accommodation establishments in Aveiro. To achieve this goal, an online survey was carried out to all entrepreneurs of the local accommodation establishments.

According to Quivy and Campenhoudt [16], the questionnaire survey consists of asking a group of respondents, usually representative of a population, a series of questions related to their social, professional or family situation, their opinions, their attitude concerning human or social options or issues, their expectations, their level of knowledge or awareness of an event or problem, or even about any other point that interests researchers.

This questionnaire was built on Google Forms, taking into account the target audience (entrepreneurs from the Local Accommodation units in Aveiro) and, based on Carmo and Ferreira [17], the questions are short, clear, sequential, closed, and open response, always aiming at the answers and in a way that does not allow for ambiguity.

The universe consists of a group of 176 LA entrepreneurs in the city of Aveiro. The data collection was carried out through a questionnaire survey, sent via email, to the 176 entrepreneurs, to try to obtain the largest number of responses. The response rate was approximately 46%, with 81 responses obtained.

This questionnaire consists of 25 questions divided into six sections. It begins with the characterization of the LA units surveyed, followed by questions on using the internet and digital social media in LA. Subsequently, the questions are about the motivations and importance of communicating through digital social media, followed by questions about the employees assigned to this area. Then, it is evaluated whether these units use the social media monitoring metrics, finally giving an optional answer to a section of personal data, in case they are interested in receiving the results of the study.

After the online questionnaire process was closed, data were collected to be processed. This treatment was carried out using the statistical software Statistical Package for Social Sciences (SPSS version 25).

42.4   Analysis

The descriptive statistics of the questionnaire survey carried out on a universe of 176 LA entrepreneurs in the city of Aveiro will be presented and analyzed.
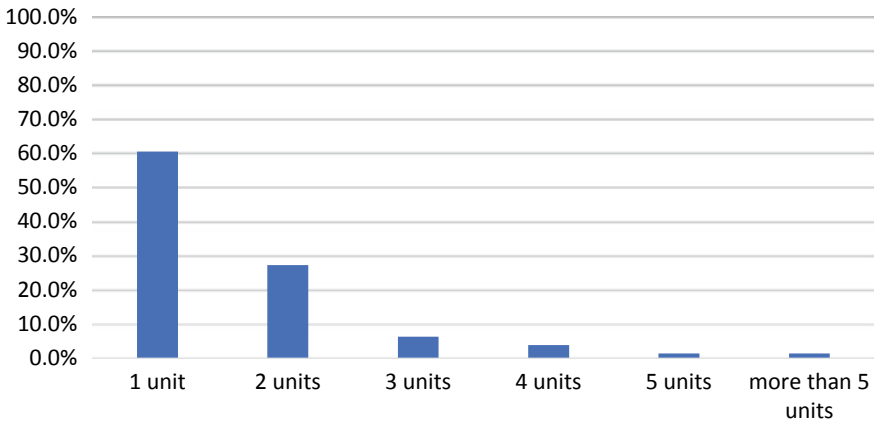
Fig. 42.1 Number of units the entrepreneur owns

42.4.1 Characterization of the Local Accommodation Establishments

Starting with the characterization of the unit, it was possible to conclude that the entrepreneurs who answered the questionnaire are, for the most part, owners of only 1 LA unit (60.5%), followed by 22 entrepreneurs with 2 units (27.2%), 5 entrepreneurs with 3 units (6.2%), 1 entrepreneur with 5 units (1.2%) and, finally, 1 entrepreneur with 9 units (1.2%), as shown in Fig. 42.1.

Considering the objective to ascertain the use of the Internet and social media by parts of LA entrepreneurs in the city of Aveiro, of all the entrepreneurs who answered the questionnaire, only 1 does not have Internet access in their LA unit, so 98.8% of respondents do. Regarding active online presence, a large majority (86.4%) claim to have an active online presence; however, only 17 of the respondents (21%) claim to have a Web site and 49 claims to use social networks (60.5%), as can be seen in Fig. 42.2.

The digital social media in which the entrepreneurs who responded to the survey are present are Facebook, TripAdvisor, and Instagram (Fig. 42.3), with 31 of the respondents responding "not applicable," taking into account that as can be seen in Fig. 42.3, 32 of the respondents answered that they are not present on social networks.

42.4.2 Motivations and Importance of Communication Through Digital Social Media

Considering the motivations and importance of communication through digital social media by entrepreneurs of LA units in the city of Aveiro, the three main reasons they
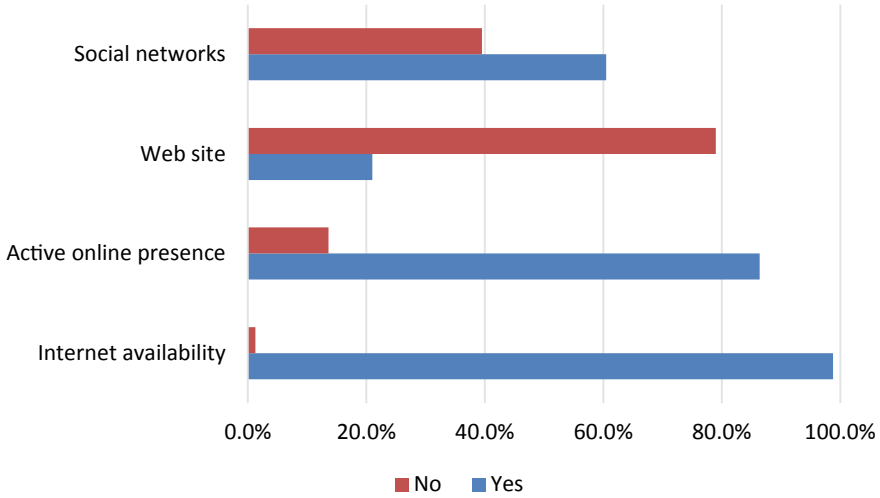
Fig. 42.2 Use of Internet and social media
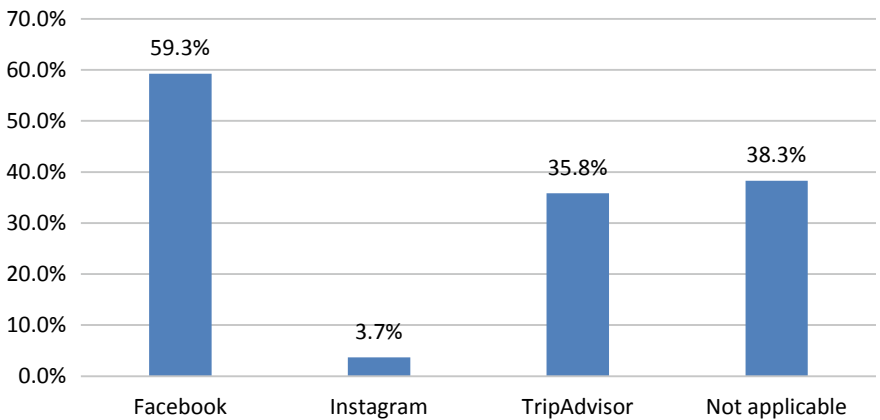
Fig. 42.3 Digital social media in which entrepreneurs' LA units are present

consider relevant to be present in the digital world are advertising products and/or services, increasing the number of reservations (bookings) and sales and also to increase the number of customers (Fig. 42.4).

Regarding the degree of importance that entrepreneurs give to promotion activities on social networks, 19.8% considered it very important, 30.9% considered it important, 28.4% considered it neutral, 12.3% considered it unimportant and 8.6% consider not at all important, as can be seen in Fig. 42.5.

When asked about the benefits they consider relevant for the participation of their LA units in social networks, entrepreneurs mainly stressed the reduction in costs,

Not applicable ■ 34.6%
Develop word-of-mouth marketing ■ 3.7%
Analyse customer comments ■ 9.9%
Create closer relationships with customers ■ 12.3%
Increase customer loyalty ■ 9.9%
Communicate with customers ■ 32.1%
Increase the number of customers ■ 58.0%
Increase unit brand confidence/awareness ■ 18.5%
Increase the reservations and sales ■ 54.3%
Analyse demand ■ 2.5%
Advertising products and/or services ■ 54.3%

0.0% 10.0% 20.0% 30.0% 40.0% 50.0% 60.0% 70.0%

Fig. 42.4 Reasons for presence in digital world

Fig. 42.5 Degree of importance of social media promotion activities

8.6%
19.8%
12.3%
30.9%
28.4%

■ Very important ■ Important ■ Neutral
■ Less important ■ Not at all important
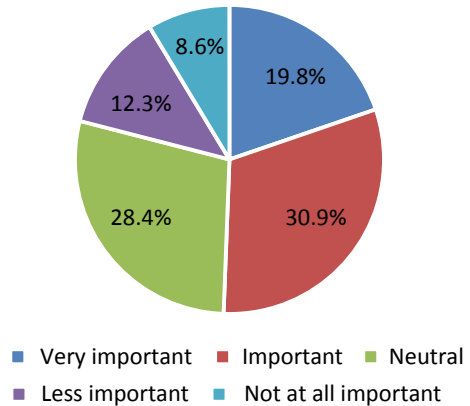
the fact that they can offer real-time communication with the customer, and the easy and intuitive use of social networks (Fig. 42.6).

It was possible to ascertain that 37 of the entrepreneurs who responded did not have any digital marketing collaborators in their unit, 42 had one person and only 2 had two people. It was also possible to conclude that of the people who manage the digital marketing of these LA units, only three entrepreneurs have allocated people trained in the area. In this fourth part of the questionnaire, it was also attempted to understand the average number of hours per week dedicated to the development of activities in the online world, and it was concluded that the majority (77.8%) devotes less than 2 h per week.
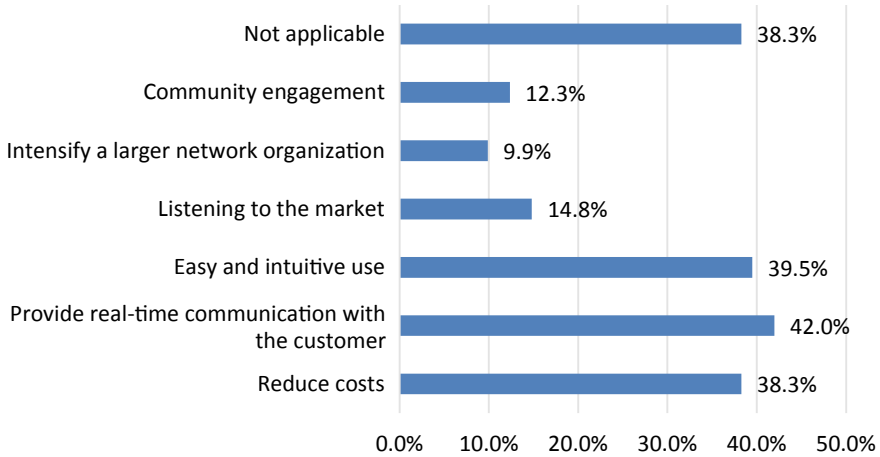
Fig. 42.6 Benefits of participation in social networks

42.4.3 *Overall Budget for Promotion Activities on Social Networks*

When asked about the percentage of budget spent on promotion activities on social networks, the vast majority (90.1%) responded that it ranges from 0 to 10% (Fig. 42.7).

Even though the investment in social networks is mostly reduced, it was possible to conclude that the % of online sales of the total sales is largely (92.6%) between 81% and 100% (Fig. 42.8).

Fig. 42.7 % of the overall budget spent on social media promotion activities
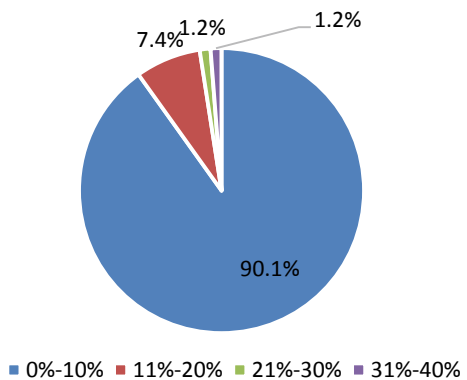
Fig. 42.8 % online sales
compared to total sales
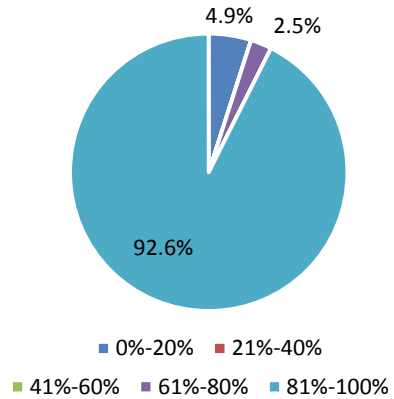
42.4.4 Metrics and Monitoring

In the last part of the survey, an attempt was made to ascertain whether entrepreneurs in LA units in the city of Aveiro use monitoring metrics in the digital world.

It was possible to ascertain that the social network that has generated more revenue for the LA units was Facebook with 45 responses. Of the respondents, 35 responded that it did not apply to their case and there were still two people who wrote Booking and Airbnb as "Another Option" that will be disregarded for not being social networks, but rather online sales platforms.

Ultimately, an attempt was made to ascertain whether these entrepreneurs use any system to measure their presence on social networks, and it is concluded that 55.6% do not use it due to lack of resources, 7.4% do not use it because it is not important and, only 9.9% admit to using systems to measure their presence on social networks. The remaining percentage (27.2%) replied that it did not apply to their case.

Of the eight respondents who admitted to using measurement systems, it was also possible to verify that they only use Google Alerts and Facebook Insights.

Finally, an attempt was made to ascertain the obstacles encountered in assessing presence on digital social media, and the obstacles cited were: reduced budget (36 responses), weak human resources (6 responses), reduced technical information on monitoring digital social media (14 responses) and little information about strategies to be used in digital social media (12 responses).

42.5 Discussion of Results

The empirical study allows to conclude that these companies use the digital world to advertise their services, boost reservations and sales, increase customers, and communicate with them. However, few companies are using the digital world to analyze demand, to create a closer relationship with the customer, to increase brand

confidence/awareness. The purpose of most of them is just to sell not to create a relationship with the consumer.

This study also allowed us to conclude that although the majority of respondents (50.7%) think that the promotion activities of social networks for their LA units are very important or important, only 3 of the respondents (3.7%) admit having a defined strategy for the presence on social networks. Despite the importance that respondents gave to social media promotion activities, they then admitted not having a defined strategy.

Moreover, despite the importance that the LA units give to social networks, the fact is that most do not have a single person with specific training in the area that allows the development of appropriate strategies in the use of social networks and are also few companies that measure the gains/benefits obtained. Only three entrepreneurs have allocated people trained in marketing.

A very relevant point to analyze is the fact that 90% of the respondents admit to spending only between 0% and 10% of the global budget on promotion activities on social networks. However, the % of online sales of the unit's total sales is largely (92.6%) between 81% and 100%. This once again reinforces the presence of these units in online sales platforms, also reinforcing their primary objective: to sell.

It was also possible to verify that this type of accommodation unit practically does not use systems to measure their presence on social networks, in which the majority state that they do not do so due to lack of resources, but also due to technical information on the subject being reduced.

By crossing the different variables under study, it was possible to conclude that entrepreneurs with only 1, 2, 3, and 4 LA units have an active online presence, mainly on the social networks Facebook and TripAdvisor, to advertise their products/services, increase the number of reservations and sales, as well as the number of customers. Not everyone gives much importance to the promotion activities on social networks; however, it was the entrepreneurs with 1 LA unit the only type of entrepreneurs to admit a defined social network strategy.

Entrepreneurs with 1, 2, 3, and 4 LA units consider participation in social networks beneficial in reducing costs and offering real-time communication with customers, which are easy and intuitive to use. As for the number of people allocated to digital marketing, practically half of these entrepreneurs have no one allocated to it; however, the other half has 1 person, and they were also the entrepreneurs with more employees trained in the area; however, the time invested in activities in the online world is reduced (less than 2 h a week). These entrepreneurs see Facebook as a source of income; however, the budget for it is almost nonexistent. On the other hand, it is in the online world that the highest percentage of sales comes from. Finally, these entrepreneurs practically do not use systems for measuring the presence on social networks and those who use them are only entrepreneurs with 1 and 2 LA units, staying with Facebook Insight and Google Alerts.

Entrepreneurs with 5 and 9 units admitted that they do not have an active online presence, so they are not on social networks either. The entrepreneur with 5 LA units remained almost neutral to the degree of importance of the activities of social

networks, while the entrepreneur with 9 LA units admitted that he considered it unimportant. Despite this, their percentage of online sales is between 81% and 100%.

Regardless of the typology, the motivations for being present in the online world are the fact that they advertise their products/services, increase the number of reservations and sales, as well as the number of customers.

42.6   Conclusion

Entrepreneurs of LA in the city of Aveiro still have a very product-centered approach in today's marketing approach that considers human feelings, social transformations, and interaction revolutions in the network. These entrepreneurs hardly interact with the customer, much less build deep relationships that could result in customer loyalty.

It is true that the entrepreneurs of LA units in the city of Aveiro, despite giving some importance to the online world, are not yet using it completely, and there is still a large margin of investment to be made as soon as possible since the competition is increasingly strong, dedicated and greater in the tourism and hospitality sector and, as such, operators in this sector must recognize the relevance of outlining marketing strategies, with a view to public visibility and defining an appropriate position in the face of increasing competition, something that digital tools can provide more quickly and effectively. Social networks are a channel for distributing information, as well as a challenge and opportunity. It is essential to study, reflect, and analyze strategic and operational objectives when intending to create a social network. It is important to define the segments, the target, the objectives, the message to be transmitted, and to have control over it. A strategy defined by a marketeer is needed to identify where potential customers are and what is the best way to communicate with them.

In short, LA units must realize that it is essential to study what is most valued by tourists, reflect and analyze strategic and operational objectives, define the segments and the target, to adapt, create, and develop strategies to fulfill consumer interests.

Following the transversal and experimental character of this investigation, information sources from different areas were used, with emphasis on digital marketing and tourism. From the literature review carried out, it was possible to verify that studies on digital marketing in local accommodation are almost nonexistent. Therefore, with the results obtained, throughout the present investigation, it contributed to the deepening of the theme and to the awareness of the need for local accommodation to adapt to the development of ICTs.

For future research, resulting from this study, there is a possible work related to the profile of local accommodation entrepreneurs. It would be important to understand their profile, to create possible "Digital Orientation Manuals" adapted for this audience.

Another possibility for future research arises with the need to study the profile of the tourist looking for a local accommodation. It is necessary to understand which platforms the tourist is on, how he prefers the communication to be made, what he

values so that LA entrepreneurs can have a more assertive presence in the online world.

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Chapter 43
Public Sector Marketing 4.0: A Catalyst to Boost the Improvement of Public Management in the Post-Pandemic COVID-19 Era

Manuel Antonio Fernández-Villacañas Marín

Abstract The new situation that will probably be generated immediately after COVID-19 in the context of a deep structural economic crisis advises the transformation of public management within the modernization of the public sector, through the implementation of public sector marketing models 4.0, guaranteeing the democratic values of public governance. Highly politicized public systems that formulate corporate and fragmented policies, dominated by influential politicians with interests outside the public interest, in which the opinions of civil society and civil experts are not taken into account; an increasingly hierarchical, individualistic and short-term culture, with little planning and implementation capacity, and low regulatory quality; or the opacity and lack of transparency that make it impossible for citizens to trust public administration, are some of the phenomena that need to be avoided. The use of public sector marketing 4.0, compared to those currently used exclusively for electoral purposes, would allow a more dynamic, exhaustive and real identification of social needs, the planning and management of a supply of public services totally focused on genuine needs of citizens, as well as a more effective, efficient and transparent management of public resources.

43.1 Introduction

The global pandemic of the coronavirus (COVID-19) has highlighted the high vulnerability of almost all countries to this type of threat and their inability to respond effectively, fully protecting the population. It seems clear that this pandemic will involve a profound change in the lifestyle of most countries, a crisis in traditional economic systems, and a structural change that will lead us to a new global situation that is currently unknown.

This progressive increase in risk situations associated with infectious diseases could be the result of a rapid global change that is altering the relationship of humans

M. A. Fernández-Villacañas Marín (✉)
Consulting Directorate, M&M Planning and Project Management, Madrid, Spain
e-mail: manuel.fernandez@mm-ppm.com

with their environment. Therefore, the following factors, such as the concentration of the population in large urban centres and their progressive ageing, the predatory use of resources that generate profound imbalances in ecosystems, the consequent climate change and rising temperatures, or as population displacement increases as a result of the uncontrolled development of unsustainable world tourism, there are some aspects that seem to favour contagion, as well as the spread of these deadly diseases.

Faced with this spread, the capacities of the governments of many countries that seemed advanced have turned out to be late, improvised, ineffective and insufficient.

The new situation will be generated immediately after COVID-19, and its foreseeable outbreaks will hinder the governance of many countries in the context of a structuralized economic crisis of unknown dimensions. It seems to advise addressing a restructuring process in depth and improvement of public management, in which political ideology would be less prominent.

For this, the use of public marketing models, as opposed to those currently used exclusively for electoral purposes, would allow for a more dynamic, exhaustive and a real identification of social needs. In addition, the planning and management of a supply of public services which should be totally focused on the authentic needs of citizens, and a more effective, more efficient, and less corrupt management of public resources. In sum, the strengthening and improvement of the capacities of a more democratic governance. The support of economic intelligence, the use of social networks and the massive use of disruptive technologies in data science would transform the models of traditional public marketing into new public sector marketing 4.0, to implement and improve the reform proposed by Post-New and New Public Management [1, 2] (NPM and PNPM onwards).

Objectives, Methodology and Contents

In view of the above, the transformation of public management is considered necessary, within the modernization of public administration itself, through the implementation of public marketing 4.0 models. This would allow avoiding a series of fairly widespread phenomena, which are totally inadequate to face COVID-19 and the induced crises that are taking place: highly politicized systems that formulate corporatist and fragmented policies, dominated by influential politicians with interests outside the public interest, and in which the opinions of civil society and from the civil experts practically do not count; to avoid a hierarchical, individualistic and short-term culture, with little planning and implementation capacity and low regulatory quality; and in general, to avoid the opacity and lack of transparency that makes it impossible the trust of citizens in public management.

In relation to the methodology, the approach and the development of the research have been carried out using a qualitative methodology, by applying a descriptive and explanatory method on the research problem, generating new orientations, approaches and trends to guide a possible solution. The bibliographic review has served to synthesize the essential concepts and approaches to the investigated problem, reviewing all this with a level of detail that is considered sufficient.

To achieve the objectives, the work has been structured in three sections. Let us first address a synthesis of the main aspects within the transformation of public administration, NPM and PNPM. Secondly, the necessary condition for the implementation of public sector marketing 4.0 will be analysed, the previous implementation of lean and agile management principles. Finally, the concepts and the keys for the application of public sector marketing 4.0 will be studied.

43.2 Transformation of Public Administration: NPM & PNPM

According to the name of NPM that Ch. Hood used for the first time [3], a generalized reform program was proposed that was implemented in practically all OECD countries and beyond [4]. This implied the introduction of corporate-type changes in public sector organizations, including the replacement of hierarchical coordination with competition, the market mechanism to improve the efficiency of public services or the introduction of product culture aimed at strengthening accountability [5].

This new approach emphasized since its inception the application of the concepts of economy, efficiency and effectiveness in government organizations, as well as in political instruments and their programs, trying to achieve total quality in the provision of public services, and dedicating less attention to procedural requirements dominated by legal and non-optimized management approaches, standards and recommendations [6].

We could synthesize that NPM pursues the creation of an efficient and effective administration, that is, an administration that meets the real needs of the citizens at the lowest possible cost, favouring the introduction of competition mechanisms that allow the election of users and in turn promote the development of higher-quality services. All this surrounded by control systems that grant full transparency of the processes, plans, and results, so that on the one hand, they perfect the election system, and, on the other, they favour citizen participation [7].

The implementation of this new public administration model implies not only a process of institutional reengineering, understood as the modification of the norms that delimit the actions of public organizations, but also a profound transformation of the behaviour patterns that govern relations between agents of the public sector, and between them and the private sector. Such dynamics of change tend to generate resistance among various agents that may see their power niches compromised in the State, so the application of NPM requires a holistic approach to change management that allow to transform the structures, processes and culture that predominate in the management of the public and public–private issues.

The processes of change generated by the implementation of NPM can essentially be framed into four broad categories: the rationalized State, the separation of strategic and operational levels, a new attitude of service, and a new management model with new technological tools. These characteristics suppose a series of advantages with

respect to the traditional bureaucratic model, in that it provides technological tools and new methodologies to public managers to execute their tasks in a flexible, efficient and transparent way, stimulating leadership and innovation, particularities that have been traditionally associated only with the administration of private companies. In addition, by putting the citizen at the centre of the model, it introduces a fundamental break with the traditional perspective: the final objective of the public administration will be to effectively process the demands of citizens, guaranteeing the provision of quality services and adjusted to their needs.

The reform processes that have been implemented within NPM have found certain criticisms. Among others we can highlight an excessive decentralization, diffuse vertical control, lack of horizontal coordination among the organizational units, a strong focus on the results and management evaluation, and the distancing of the generalizing and overall vision of the well-being of citizens [8–11]. The set of reforms that have been proposed in the organizational structures in order to disaggregate the public sector entities has resulted in greater fragmentation of the functions to be performed, and a certain ambiguity in the definition of the same, with an excessive level of vertical specialization and little cooperation between the different bodies and agencies. On the other hand, decentralization, management measures and accountability systems, as opposed to the intended flexibility they pursue, have introduced control mechanisms that limit the management autonomy of those responsible for administration activities in the sector public [9, 11, 12]. Finally, the excessive focus on efficiency has led to the marginalization of traditional principles of the public sector in the provision of goods and services, such as neutrality, social justice or social welfare [13].

Faced with these difficulties, a process of criticism and revision of NPM has begun, whose main result has been the development of new approaches, for whose conceptualization many public administration academics frequently use PNPM [14, 15]. This new approach describes the general panorama of a reform that during the last fifteen years has created a hybridization of the public sector and of the organizations that operate within it. Many authors share the need for a new perspective. In view of the approach by which large bureaucratic organizations have become more flexible and disaggregated into smaller control units that are very difficult to coordinate, a reconfiguration with a set of interconnected approaches is necessary [12]. Their main objective is cooperation and collaboration, both within public organizations and with private entities, for which a process of centralization and coordination must be carried out [16, 17]. For all these reasons, a review of Weber's bureaucratic theory postulates has been encouraged, insisting on the re-centralization and re-organization of public administrations, but without losing the validity and increasing application of public–private collaboration models.

During the last years, digital technology has become the support base for achieving integrated and coordinated public services and administrations [18]. The great variety of changes connected and focused on the new information and communications technologies have generated a new approach that incorporates all the new changes towards the Digital Age Governance (DAG). This implies the reintegration of functions in the governmental sphere, the adoption of holistic structures oriented to the needs

of citizens and the progress of the digitalization of administrative processes. This approach offers a perhaps unique opportunity to create a self-sustainable change, in a wide range of closely related technological, organizational, cultural and social effects [15].

43.3 The Necessary Condition for the Implementation of Public Sector Marketing 4.0: Lean and Agile Management

The viability of the proposed improvements has as a necessary condition prior to the application of the public sector marketing 4.0 models, the implementation of lean and agile management techniques, tools and methodologies.

Far from being both incompatible methodologies, they are strongly complementary to the improvement of the functioning of the organizations, being their main differences regarding their operation and the aspects of the organization to which they apply, the following (Fig. 43.1):

- First, lean management comes from the production and logistics sector, while agile management comes from the development of IT projects.
- Second, lean management is a long-term process improvement system, while agile management is used primarily in structures that act in the short term in which rapid decision-making is necessary.
- Third, lean management manages the general work and continuously of the organization as a whole and applies to all areas to be more efficient, while agile management focuses on specific tasks to make good fast decisions, solving problems in the best possible way, in the shortest possible time.

Fig. 43.1 Agile management and lean management *Source* Own elaboration
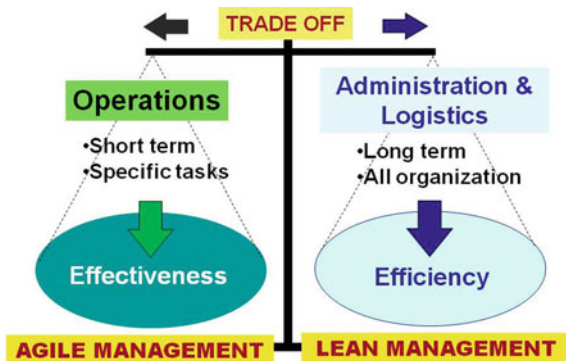
- Finally, agile management is especially useful in the field of operations in which the effectiveness of activities is essential, while lean management is the fundamental methodology in administration and logistics activities in which efficiency is the key.

Lean and agile management are simultaneously opposing and complementary. Different authors consider strategies should be combined lean management and agile management since it is necessary to answer to different needs, low costs (lean) and quick responsiveness (agile), both highly valuable for efficient and effective performance [19, 20] (Fig. 43.1).

The integrated application of the lean and agile methodology generates a new leadership approach that creates and maintains a dynamic culture of continuous improvement through a synergistic system with the best strategies, techniques and ideas. Therefore, very relevant approaches are considered to implement the change towards organizations oriented towards excellence, whose application to the public sector will lead to the improvement of the effectiveness and efficiency of the organization, the improvement of customer orientation and a better overall performance of the core of its activities.

The benefits of implementing these solutions in public administration are shared among all members of society. The users of public services develop increasingly demanding expectations, faster changes, more innovative designs, lower tax desires, ease in processing procedures and perfect quality always. Faced with such expectations, in the face of strong pressures to reduce costs, and with increasingly reduced reaction time margins, lean and agile management becomes a key factor in streamlining and eliminating waste of operational processes and administrative of the different public organisms [21, 22].

43.4 Generating a Solution: The Applications of Public Sector Marketing 4.0

One of the first definitions of public sector marketing was raised by Coffman, who considered it as a two-way catalyst that increases and accelerates the exchange processes between users of public services and the agents responsible for their offer, planning and design [23]. Years later, Kotler and Lee considered in a broader and differentiating concept of its application in the private and public sectors, that *"marketing is much more than advertising; it is about knowing your customers, partners, and competitors; segmenting targeting and positioning; communicating persuasively; innovation and launching new services and programs; developing effective delivery channels; forming partnerships and strategic alliances; performance management and pricing/cost recovery. Marketing turns out to be the best planning platform for a public agency that wants to meet citizens' needs and deliver real value. In the private sector, marketing's mantra is customer value and satisfaction. In the public sector, it is citizen value and satisfaction"* [24].

Although the free market is based on voluntary exchange and that has the individual as its nucleus, and therefore the individual interest, public organizations represent communities, not only individuals, and therefore follow a common interest. In this sense, the concept of public value is especially important, which is considered as what government activities produce, with due authorization through the representative government, and taking into account the efficiency and effectiveness with which the public policies are designed and public services are produced [25].

Public sector marketing is the element that complements NPM and PNPM, since it focuses on introducing market instruments, tools, and techniques in public management [26]. It allows the strengthening of State action, under more technical, efficient, and effective parameters, and management by results. Basically, it gives greater consistency to the idea of modifying the management structure of public administration, pronouncing itself with greater precision to the fulfilment of its objectives, which is the common welfare and social development through the inclusion of all [27].

Within the application of marketing to public management, and in relation to the relationships between public entities and citizens, the necessary concurrence and participation of civil society in public management should be highlighted. This should be not only a purpose and an objective of the performance of the same, but a means of action in all the activities of the sequential and recurrent phases: *Consultation*, *Concertation*, *Decision-making* and *Action* (Fig. 43.2). Based on this approach, the entire process should be oriented towards maximizing the collective social utility function freely established by civil society, with the constraints of available public resources.
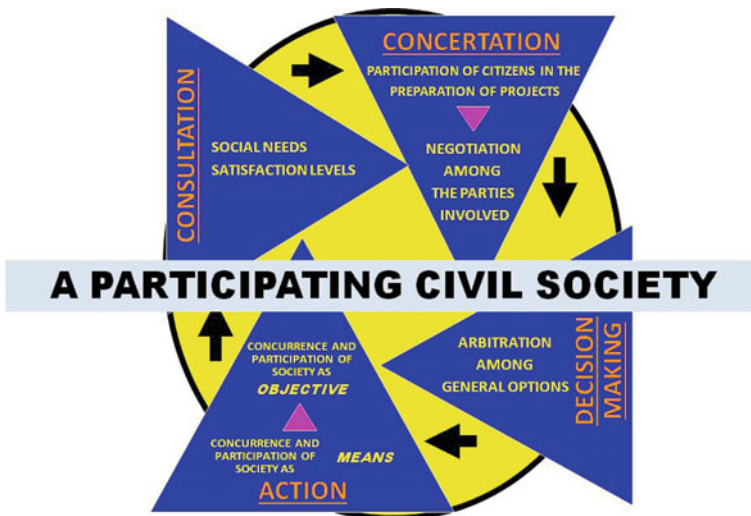
Fig. 43.2 Public sector marketing approach—a participating civil society *Source* Own elaboration

Public sector marketing models have been highly supported by theoretical authors from both political science and public administration, and from marketing itself. This support is based on the great value that its application supposes for the development of democratic political regimes. However, its application in the practical field has not gone from being anecdotal in many countries during the last decade, perhaps due to the democratic involution that is being experienced in most countries.

Marketing 4.0: The Optimal Combination of Traditional and Digital Marketing

Marketing 4.0 is the current stage in which it is necessary to combine the best of traditional marketing and digital marketing, using offline and online channels, and where its main objective is to win the support and trust of the client. Private companies that want to survive, and in parallel public entities, have to resort to new digital tools for interaction with social networks, and use data science technologies to facilitate business management, but there will continue to be a mix between the old and new forms, mixing the traditional and the digital [28].

Traditional marketing is focused on the product or service and sales, influencing the consumer with advertising with the sole objective of selling. It uses traditional means of communication, such as television, radio, newspaper, and it develops in an offline world. It tries to reach a massive audience and, consequently, requires a larger budget due to the use of these means. Communication is unidirectional, that is, there is no interaction between the parties, and the company, if it wants, can respond to consumers. In this model, there is more difficulty in measuring the results.

On the other hand, digital marketing is implemented in digital media (social networks, e-mail, search engines…) on online channels. Its focus is on the tastes and interests of the consumer. It seeks to attract people voluntarily, since it manages to entertain, educate and provide content of value for them. Moreover, it develops a more direct communication with the target audience, which goes from both directions, allowing and facilitating feedback. It allows communication between companies and consumers easily, in real time. Social networks are a very useful and necessary tool; they remove geographic and demographic barriers, facilitate communication and drive innovation. In addition, the development, design, execution and analysis of marketing actions are much faster, allowing a greater degree of adequacy of campaigns and greater effectiveness of them since they can be modified in real time, are cheaper, and allow how to know and measure the impact achieved and the results in an effective and immediate way. In addition, they allow users to obtain information online, which helps entities to better understand their users / clients and to create more efficient actions [29].

Brands are integrating online and offline channels trying to combine the best of both worlds; the immediacy of online channels and the intimacy of online channels with the strength of differentiation represented by offline actions. Through this strategy called omni-channel, it is hoped to obtain a transparent and coherent experience. In addition, this multiple relationship between brand and consumer is complemented by machine-to-machine connections through artificial intelligence, which improves marketing productivity, and human-to-human connection that improves customer engagement and loyalty.

The evolution of public sector marketing towards new public sector marketing 4.0 through the inclusion of digital marketing supposes an immense potential of its use as a catalyst for the improvement of public management. In addition, to maximize its effectiveness and efficiency in satisfying the needs of citizens in general, offering services and programs in line with them, and thereby contributing to the fulfilment of the State's goals. This implies knowing very well what the target audience needs and if the desired added value is being generated.

The correct implementation of the marketing-mix tools offered by new public sector marketing 4.0 will allow effective and permanent two-way communication, helping to achieve interest, interaction and credibility on the part of citizens. By planning and controlling actions on social networks, it is possible to contribute to meeting the objectives of the organization and the State itself. Public organizations must adapt to the current media by integrating communication channels. But even if it is a fact that the traditional media have lost relevance, it does not mean that they cease to be important for addressing the public, since the totality of it is not only found in social networks.

In Any Case, the Maxim that Must Prevail in the Transformation Processes Should Be "Public Administration at the Service of Citizens" and not "Citizens at the Service of Public Administration". New Public Sector Marketing 4.0 Should Guarantee the Democratic Strengthening of Societies, Avoiding Becoming Political–Electoral Marketing, and Avoiding that Societies End up Evolving Towards Orwellian Models with a Totalitarian Profile, as Orwell Describes in His Dystopian Fiction Novel, in Which Information Is Manipulated and Mass Surveillance Is Practised, as Well as Political and Social Repression [30].

43.5   Conclusions

The new situation that will most likely be generated immediately after COVID-19 will hinder the governance of many countries in the context of a structural economic crisis of unknown dimensions. It seems to advise addressing a restructuring process in depth and improvement of public management, in which political ideology would be less and less present.

For this, the use of digital economic intelligence, the social networks and data science technologies is necessary, transforming the traditional models of public sector marketing into new public sector marketing 4.0 to implement and improve the reforms proposed by PNPM and NPM, previously integrating lean and agile management, and guaranteeing in any case a more effective, efficient and democratic governance.

These implementations in the different countries will require the design of ambitious strategic plans for public administration transformation and public management reforms, which, based on the digital transformation of their organizations, should integrate the new methodologies, techniques and tools of new public sector marketing 4.0.

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Chapter 44
Accountability Journalism During the Emergence of COVID-19: Evaluation of Transparency in Official Fact-Checking Platforms

Angel Torres-Toukoumidis, Nieves Lagares-Díez, and Daniel Barredo-Ibáñez

Abstract The emergence of COVID-19 has permeated the field of communication producing a silent crisis related to the production and dissemination of news. In this context, the platforms for the verification of facts and data, also called fact-checking, have been constituted as a solution to the misinformation generated by the pandemic, deriving a halo of transparency and veracity that is called into question in this research. These platforms have been evaluated by the first specific objective based on six dimensions: acquisition, information, verification, presentation, interaction and dissemination, and are subsequently examined according to their link to the news about coronavirus. To achieve these objectives, 72 fact-checking platforms supported by the International Fact-Checking Network were analysed. In these platforms, 936 data were obtained, driven by the indicators of each dimension, which showed an increasing trend in acquisition (88%), information (91%), verification (85%), presentation (77%) and dissemination (92%), but with limitations regarding the interaction (47%) of the verified information that moves them away from the transversal notion of digital interfaces. Likewise, concerning the situation produced by COVID-19, the lack of a different civic co-responsibility agreement, beyond the one used for the coverage of other news, is noted at a general level. In short, the following situation is presented for future research: fact-checking, entertainment in exchange for donations or democratic commitment?

A. Torres-Toukoumidis (✉)
Universidad Politécnica Salesiana, Cuenca, Azuay 010105, Ecuador
e-mail: atorrest@ups.edu.ec

N. Lagares-Díez
Universidade de Santiago de Compostela, 15782 Santiago de Compostela, Spain

D. Barredo-Ibáñez
Universidad del Rosario, Bogotá, Colombia

44.1   Introduction

The information disseminated by both traditional and digital media has come under scrutiny due to the infodemic caused by COVID-19. This is not the first time; in fact, there are several studies on communication focused on infectious diseases [1] such as avian flu [2], swine flu [3], Ebola [4] and Zika [5], to name a few. The role of the media during emergencies has been essential to mitigate public opinion but, ultimately, the current situation involves both a communication and a health crisis. In other words, the disinformative dissemination together with the chaos in the healthcare system has outlined a new communication scene, where news verification platforms, also known as fact-checking platforms, have made, perhaps accidentally, a recent commitment to civic co-responsibility. Hence the following questions: Are fact-checking platforms up to the task? How transparent is the information published by these platforms? Is the information provided understandable enough for users?

While the scientific field has addressed fact-checking platforms [6] delving into their etymology and application, the communicative changes brought about by COVID-19 have been explained. Therefore, this research considers it necessary to evaluate these platforms' involvement during the emergency through the following objectives:

Overall objective: Assessing the transparency of fact-checking platforms from the appearance of the COVID-19 emergency.

Specific objectives:

- Reviewing the presence of indicators related to transparency in fact-checking platforms.
- Verifying the connection of fact-checking platforms with news about COVID-19.

In this sense, and acknowledging the intention to solve the scourge of fake news through computerised systems [7, 8] and through the inclusion of media literacy in formal education [9], the most pragmatic perspective seems to be the development of fact-checking platforms [10], specifically for the situation brought about by COVID-19 [11].

44.2   Materials and methods

The following research uses a qualitative deductive approach with a descriptive–hermeneutic scope [12]. This approach emphasises the understanding of reality from the perspective of the insider, capturing the specific meaning each protagonist assigns to a fact, and considers these elements pieces of a systematic set [13] incorporating the shared notions and ideas that provide meaning to social behaviour [14] based on the gathering of data through participant observation and documentation.

To this end, we proceeded to obtain and analyse, as a sample, the 74 fact-checkers that, until the 10th of April, 2020, signed the five principles of the International Fact-Checking Network code [15], which have been supported to provide transparency regarding the news about COVID-19:

1. Nonpartisanship and fairness
2. Standards and transparency of sources
3. Transparency of funding and organisation
4. Standards and transparency of methodology
5. Open and honest corrections policy.

The 74 signatory platforms verified by the IFCN come from five continents, including prominent countries such as the USA with eight agencies, Indonesia with seven, France with five, and Spain with three, to name a few. The date of the first news story related to COVID-19 in the validated fact-checking platforms, proving that 42% (31/74) began covering fake news from January, 26% (19/74) from February, and 30% (22/74) from March. Finally, USA TODAY and dpa-Faktencheck have access limitations regarding their monthly archive; for that reason, they represent the remaining 3% and are excluded from the final sample. Ultimately, this section confirms that during the first three months of 2020, the 72 platforms validated by IFCN started to cover the COVID-19 situation, gradually incorporating the verification of news stories spread by the traditional and digital media of each of their countries.

Additionally, in order to know the transparency and veracity of the 72 fact-checking platforms, we applied the six dimensions we mentioned, which had been previously validated in the assessment of 22 fact-checking platforms different from the ones presented in this study. Our aim is to expand the analytical sample during the context generated by the COVID-19 crisis. The respective dimensions and indicators outlined within this taxonomy are the following:

1. Acquisition: How is Information Gathered?

   Indicator 1.1: Offers users the opportunity to send information in order to verify it.

2. Information Who Verifies the Information? How is Information Verified?

   Indicator 2.1: Information about the editorial team that verifies information.
   Indicator 2.2: Editorial verification process.

3. Verification: What is the Detailed Procedure to Determine the Veracity of the Information?

   Indicator 3.1: Classification of veracity verification.
   Indicator 3.2: Explanation of veracity.
   Indicator 3.3: Sources used to contrast gathered information.

4. Presentation: How is the Gathered Information Presented?

   Indicator 4.1: Includes fragments of the fake information.
   Indicator 4.2: Contains veracity indicators.
   Indicator 4.3: Statement of the documents received.

5. Interaction: What Kind of Exchange is Built with Users?

    Indicator 5.1: Includes a comment section for users.
    Indicator 5.2: Includes the option of voting on the verified news story.

6. Dissemination: After Verifying the Facts, How is the Obtained Information Disseminated?

    Indicator 6.1: Through social media.
    Indicator 6.2: Through a contact email address.

    Whether or not they are fact-checking platforms with their own domain —such as Argentina's "Chequeado" (https://chequeado.com/)— or subsites of main websites —such as AP Fact Check (https://apnews.com/APFactCheck), which belongs to USA's Associated Press—we have not analysed if they belong to a specific editorial line. Meanwhile, the platform's active time does not affect the analysis either, i.e. there are both fact-checking websites that have been active for more than a decade, such as Politifact (2007), and recent platforms such as Maldita.es, launched in 2018. The study focuses on the platforms from the dates of the first news stories related to COVID-19.

    After establishing the selection criteria, the procedure used to systematise the assessment of the 74 fact-checking websites was set up through an exhaustive revision complementary to the model, in which, while we codified the absence (0) and presence (1) of the indicators for the six dimensions, we also performed a revision of the attributes of each platform, delving into each of the highlighted aspects. It is worth mentioning that the results will include some platforms' names in an effort to promote their improvement.

44.3 Results

After revising 72 fact-checking websites based on six dimensions and 13 indicators, 936 data have resulted from the study, where the average of indicators present on each platform is 9.875. In other words, this indicates that every platform includes 10/13 indicators. Furthermore, by exploring the existence of each indicator within each platform we can prove that:

    In Fig. 44.1, we see two extremes. Indicator 6.2 "contains a contact email" has been included by 100% of the verification platforms, while indicator 5.2 "includes the option of voting on the verified news story" has only been included by 7%. Additionally, and maintaining as a premise the assessment of the website only from the beginning of the healthcare crisis and the verified facts related to COVID-19, we obtained the following descriptive rating of the dimensions stated ut supra:
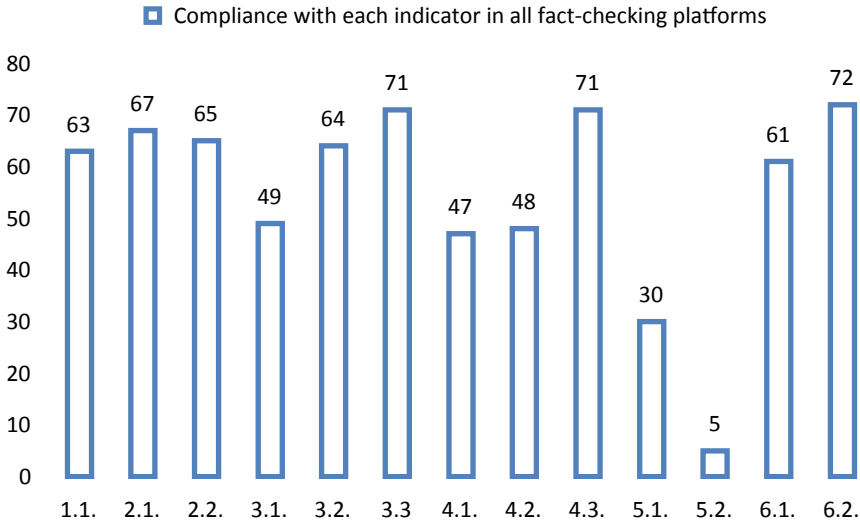
Fig. 44.1. Compliance with each indicator in all fact-checking platforms. *Source* Authors' own creation

44.3.1 Dimension 1: Acquisition

Promoting the democratic view and the civic transversal notion, this dimension is summarised as inviting users to make suggestions and reveal their suspicions about disseminated facts. Therefore, 90% of platforms allow users to send information that needs to be checked. The sending formats are heterogeneous; nonetheless, three common types have been identified: email (37/63), contact form (24/63), and question submission form (2/63). In the first instance, most websites include their email (e.g., Argentina's Chequeado; USA's Lead Stories; Indonesia's tirto.id; Croatia's Faktograf; India's The Quint), occasionally accompanied by their WhatsApp (Ireland's TheJournal.ie). Regarding the contact form (such as in France's AFP fact checking, Kazakhstan's Factcheck.kz, Jordan's Fatabyyano Project), some break the traditional format, such as the "Complaint Area" in the Taiwan FactCheck Center and Libération's checknews.fr in France. In both platforms, users write their respective questions in the available form following the sending protocols. In this context, it became evident that none of the platforms include a special COVID-19 section to send news about this topic. Therefore, contact forms and emails are used to submit any kind of news story a user wants to verify (Fig. 44.2).
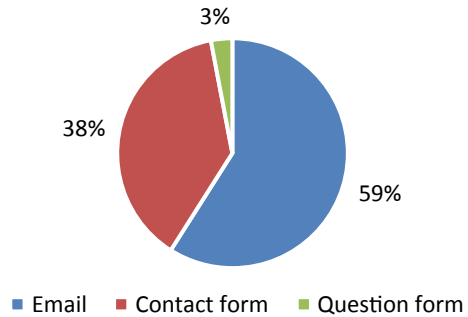
44.3.2   Dimension 2: Information

This dimension contains two indicators that can be simplified in 2.1. Team and 2.2. Methodology. Regarding the first indicator, we have divided the fact-checking platforms as follows: only states the name of the columnist; only states the names of the managers/founders/section coordinators; presents a collective; states the participants' names and surnames. Specifically, the item "only states the name of the news editor or columnist" applies to 16% (11/67)—Indonesia's Cek Falta Suara.com, Democratic Republic of the Congo's Congo Check, Lithuania's Patikrinta 15min, and Montenegro's Center for Democratic Transition, among others. Regarding the item "only managers/founders", it applies to 5% (4/67)—EFE Verifica with Desirée García and Ramiro Fuente (coordinators) in Spain; Reuters with Hazel Baker (global director of UGC Newsgathering) in the USA; The Quint with Agastee Khante (coordinator) in India; and Tirto.id with Sapto Anggoro (editor in chief), Teguh Budi Sanotoso (content manager) and Nur Samsi (technology manager) in Indonesia. The third item "presents a collective" reflects that 7% (5/67) mention a group responsible for the verification process—Kazakhstan's Factcheck.kz describes itself as a team, but does not mention the names of its members; Indonesia's Kompas, with the participation of the journalism study team from the Multimedia Nusantara University; Lebanon's Maharat-News, with the participation of Maharat Foundation's members; Kenya's PesaCheck, with editors from Kenya, Uganda and Tanzania; and Taiwan FactCheck Center with members of Quality Journalismo Taiwan Media Watch. Finally, 72% (47/67) of platforms introduce their team of collaborators. Regarding the last item, we also analysed the collaborators' LinkedIn profiles when included or the description of their experience, and none had a medical science background (Fig. 44.3).

Regarding the second indicator —2.2. Methodology— of the dimension known as information, we simply determined which platforms detail the procedure followed to publish a news article (52/65) and which mention only the use of a methodology, but without explaining it (12/65). Specifically, we divided the editorial process into six steps: 1. Selecting the news story, 2. Assigning the fact to be checked to a collaborator or analyst, 3. Verification process through fact-checking tools, contacting sources and reviewing official data, 4. Drafting the report, 5. Review of the final document

Fig. 44.3. Indicator 2.1 regarding the introduction of the editorial team

16%
6%
7%
70%

■ Only columnist   ■ Only managers/founders/coordinators
■ Only collective   ■ Collaborators' names and surnames
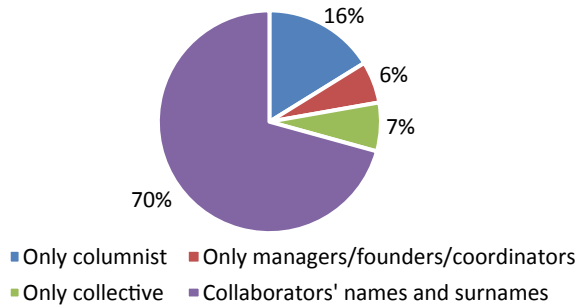
by the coordinator, 6. Publication. Of course, some platforms include other steps, particularly the verdict section where they conclude whether or not the news story can be categorised within the spectrum of falseness. News reports about COVID-19 follow the same verification methodology as other news stories.

44.3.3 Dimension 3: Verification

As set out in the methodology section, the third dimension consists of three indicators: 3.1. Uses categories to present veracity verification; 3.2. Contains a section justifying the veracity of the news story, and 3.3. Takes the sources into account for such verification. The first indicator applied to 68% (49/72) of fact-checking platforms which use verification classifications, including broad categories such as general and academic —India's Mafindo—and more specific ones such as France's Science Feedback with 18 categories—precise, inaccurate, perceptive, deceitful, biased, non-biased, sound reasoning, faulty reasoning, partial reasoning, exaggeration, inappropriate sources, vague, clickbait, lack of context, undisclosed conflict of interest, distortion of sources, exaggeration of scientific trust and reliance on obtained results. The peculiarities of this first indicator build a scale of scientific credibility that ranges from + 2 very high, +1 high, 0 neutral, −1 low, −2 very low and not applicable. Even though fact-checkers such as Newtral and Maldita.es —Spain— and Lead Stories —USA— present a COVID-19 news section, there is no categorisation by topic focused on the analysis of news related to the pandemic.

Regarding the second indicator of this dimension, where we assess the clarity of the process to obtain a verdict, 89% (64/72) present their findings coherently, systematising the investigation process in the report and achieving a conclusion about the verification of the facts. On the other hand, the remaining 11% includes platforms such as Korea's JTBC, Belgium's Knack Magazine or India's NewMobile, which include reflective articles without a conclusion.

Finally, indicator 3.3 about the use of sources applies to 99% (71/72) of the platforms. It is therefore clear that, in the light of the health crisis, the information issued by the World Health Organization and national government sources, as well

as experts in medical science and virology are the most cited in documents related to COVID-19. It is also worth mentioning two peculiarities found within this indicator: only one outlet, India's Mafindo, does not include the sources of the information gathered. Meanwhile, India's Rappler and USA's Reuters present links to their main news agency in order to argue the veracity or falseness of a news story issued by their fact-checking subsite.

44.3.4   Dimension 4: Presentation

Regarding the antepenultimate dimension, we analysed the presentation of content taking into account the inclusion of a summary (indicator 4.1.), indicators of veracity (indicator 4.2) and the origin of the fact to be checked (indicator 4.3). According to that, it was noted that 65% of platforms contain a summary section about the analysed fact, which enables a quick read of the verified fact. This dimension was also segmented according to the location of the summary section—only 3/47 present it at the end, 13/47 at the beginning, and 31/47 in the middle or, alternatively, spread over several sections of the news article. Regarding the veracity indicators (48/72), they were subdivided into two items—text format changes (16/48) and addition of new aesthetic elements (32/48). Specifically, the format change implies the use of epigraphs, bold type, italics, highlight colours and different fonts, as is the case of Taiwan's MyGoPen, Ukraine's Stopfake.org, Georgia's MythDetector, UK's Full-Fact, India's Fact Crescendo, Poland's Demagog Association, and Norway's Faktisk, among others. Regarding aesthetic elements, these include infographics, pictures with marked categories, and meters, such as Indonesia's Tempo.co, Portugal's Observador Fact Check, Spain's Maldita.es, and Venezuela's Cotejo.info, among others. To that end, we present an example (Chart 44.4):

Chart 44.4 Indicator 4.3 about aesthetic elements used by fact-checking platforms https://observador.pt/factchecks/fact-check-video-da-oms-alerta-sobre-mascaras-infetadas-que-chegam-ao-brasil/

On indicator 4.3, 99% of platforms includes the origin of the news story, and they note social media as the main point of origin and dissemination of the news story submitted for verification. In some cases, such as France's checknews.fr from the journal Libération, they also include the name of the user who sent the verification request. The only platform that does not cite the origin is Lebanon's Maharat News.

44.3.5 Dimension 5: Interaction

Regardless of the reasons surrounding censorship, the indicators of this dimension that reflects the users' interaction and expression are the least included in the fact-checking platforms. The comment section in the verified news story appears on 41% of the websites: France's 20 min Fake off; Mexico's Animal Político—El Sabueso; Indonesia's Cek Fakta—Suara.com; Montenegro's Center for Democratic Transition; USA's Check Your Fact; Argentina's Chequeado; Colombia's Colombiacheck; Democratic Republic of the Congo's CongoCheck; Venezuela's Cotejo.info; Nigeria's Dubawa; Canada's Décrypteurs; India's Fact Crescendo; Georgia's FactCheck Georgia; Jordan's Fatabyyano Project; India's Kompas.com; Belgium's Knack Magazine; Colombia's La Silla Vacía; Taiwan's MyGoPen; Spain's Newtral; Portugal's Observador Fact Check; the Philippines's Rappler de Filipinas; India's T.V. Today Netword Ltd; Taiwan's FactCheck Center; India's The Quint; USA's The Washington Post Fact Checker, Ireland's The Journal. ie Fact Check; Lithuania's UAB Delfi; Ukraine's VxUkraine; France's Vrai ou Fake?—France info; and Turkey's Teyit.org. It is worth mentioning that 60% of the comment sections request registering as a user before publishing a comment.

Indicator 5.2, defined as "includes the option of voting on the verified news story" has been included in news about the pandemic only by five platforms, with an interactive module for users through different forms of consultation such as: "usefulness and agreement with the investigation" in Brazil's Agência Lupa; reactions such as "like", "fun", "surprised" and "sad" in Indonesia's Cek Fakta Liputan 6; a like button in Georgia's FactCheck; "Was this page useful to you?" in the UK's FullFact; and a selection of reactions to the story such as "happy", "sad", "angry", "inspired", "afraid", "amused", "annoyed" and "don't care" in the Philippine's Rappler.

44.3.6 Dimension 6: Dissemination

In dimension 6, indicator 6.1 regarding social media applies to 85% (61/72) of fact-checking platforms. However, we did not specify those with a share button for several social networks, but rather platforms that have created profiles on social media. In this category, two subjects have been analysed: number of social networks and most-used social network. The first element is the number of social networks: 1 social

Table 44.1 Quantity of social media in fact-checking platforms

1 Social network	2 Social networks	3 Social networks	4 Social networks
Stopfake.org MyGoPen	AFP Fact checking AP Fact check Australian Associated press Center for democratic transition Check your fact Chequeado Congo check Faktisk Faktograph JTBC Kompas.com Knack magazine Libération-CheckNews Maldita.es Newschecker.in Pagella Politica PesaCheck PolitiFact Re:Baltica Science feedback Taiwan factCheck center The washington post factChecker The Journal.ie	Cek Fakta–Liputan 6 Dubawa Décrypteurs EFE Verifica–Agencia EFE Factly media and research FactCheck Georgia FactCheck.org FactCheckNI Full Fact Istinomjer La Silla Vacía Myth detector Patikrinta 15min TjekDet.dk	20 min Fake off Agência Lupa Animal Político–El Sabueso Aos Fatos Cek Fakta–Suara.com Colombiacheck Cotejo.Info Demagog Association Doğruluk Payı Fact crescendo Factcheck.kz Faktoje.al Fatabyyano project Lead stories Maharat-news NewsMobile fact checker Newtral Rappler The quint Vishvas.news UAB Delfi

network (2/61), 2 social networks (22/61), 3 social networks (14/61) and 4 social networks (23/61) (Table 44.1).

In the latter case, it was noted that Facebook was the social media platform with more fact-checking platforms' profiles, with a total of 60/61 official accounts, followed by Twitter (58/61), Instagram (22/61), YouTube (20/61), LinkedIn profile (11/61), Google + account (4/61), Telegram (4/61), Flipboard (2/61), and Eksisozluk, a Turkish social network (2/61). Finally, there are social media used only by one fact-checking platform, such as Tumblr by FactCheck.org; Reddit by Lead Stories; and VK by Factcheck.kz.

Regarding indicator 6.2 referred to "contains a contact email", all the platforms (100%) include an email address. In fact, in the twenty-first century, it seems compulsory to use this communication channel, especially during a pandemic.

44.4   Final considerations

The information overload generated by COVID-19 has led to the positioning of fact-checking platforms within the digital ecosystem. However, in this study we have proved that further progress is needed, especially regarding the transparency of the verification process and the relation with the users. Therefore, the results obtained show that even though fact-checking platforms involve a systematised revision process that includes news about the pandemic, they have not adapted or customised their interface to this phenomenon. In other words, news about COVID-19 are generally treated, presented and disseminated as any other news story.

Judging by our review, it is appropriate to open a debate about these platforms' civic co-responsibility to society, where the number of news reports, entertainment and, of course, donations are at the forefront. In this sense, our aim is not to echo users' scepticism towards these websites, but to understand that fact-checking platforms should be harnessed as a remedy for the infoxication boosted by the pandemic, accompanied by appropriate media literacy.

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Chapter 45
The (Post-)theatre of the Twenty-First Century in Spain and the North American Post-drama TV Series: A Political, Historic and Comparative Research. Playwrights, Patterns and All-Embracing Point of View

Check for updates

Miguel A. Orosa ⓘ**, Francisco Collado-Campaña** ⓘ**, and Viviana Galarza-Ligña** ⓘ

Abstract The aim of this paper is to do a political research (polis: the city, the culture, the homeland) about the patterns and characteristics of the current post-theatre in Spain (through its best-known playwrights) and compare them with the differentiating notes of the US post-dramatic television series. Along the way, it is described and also explored the origins of the Spanish post-drama from the Middle Ages through the Golden Age, and this in a way that this dawn of festive and popular character (unlike the technique and intellectuality of Greece) creates an individualistic and libertarian atmosphere in the stage. Accordingly, the Spanish post-dramatic universe breaks with the classic conventions and connects with the post-series television drama of the USA, which thus separates itself from its Elizabethan, and therefore Saxon, tradition. As a result, paths are opened up in order to find ways for popular and commercial seduction and to ensure the future of the industry and dramatic art in the USA based on the cultural identity policy in the realm of the Spanish language.

M. A. Orosa (✉) · V. Galarza-Ligña
Pontificia Universidad Católica del Ecuador, Ibarra, Ecuador
e-mail: maorosa1@pucesi.edu.ec

V. Galarza-Ligña
e-mail: vngalarza@pucesi.edu.ec

F. Collado-Campaña
Universidad de Málaga, Málaga, España
e-mail: fcolcam@uma.es

45.1   Introduction

The popular, individualistic and anticlassical (unconventional) political character of
the Spanish (post-)drama is becoming more and more fashionable and is a model to
be followed too by the prestigious television series in the USA.

The energetic perspective of culture provided by political constructivism certainly
implies a number of basic assumptions in the context of an interconnected world.
Perhaps one of the most significant is that the meaning of society and its cultural
products is the result of a dynamic and continuous definition that comes both from its
participants (active actors/agents) and from the spectators who are seemingly obliv-
ious to that creation (passive audience/agents). There is no definitive interpretation
of these meanings, since culture can always be redefined by a new spectator or by a
new actor who is inserted into it. This is where the opportunity and creative freedom
of any subject (or group) to adopt elements from different cultures in their artistic
productions opens up. The phenomenon of globalization configures a wide range of
cultural artefacts, senses and meanings for cultural creators. This suggests that the
content of the post-drama creates a social reality, that is to say, it also empowers the
spectators and society as creators and gives rise to a multiplicity of realities that are
created in each work/play.

The most conservative political theories have traditionally understood that the
elites have imposed their own culture on the people in Europe [1, 2]. Thus, the
education, culture and art that prevailed and were most valued during the mass society
have been those of the ruling classes until the middle of the past twentieth century.
However, the post-drama has never been a space of cultural domination of the elites
in the Spanish-speaking countries due to its particular characteristics and the heritage
of popular elements incorporated since the Middle Ages and the Golden Age. In this
confrontation between plays that are adapted to technical and conventional canons
and those that are created from the popular, we find the antithesis between an elitist
and a participatory vision of the world [3].

This point and the evolution that the post-drama is adopting in these cultural
coordinates positions us in the participatory political theories. These participatory
approaches to democracy recover a space that had been traditionally denied to the
people. To this end, participatory theory takes direct root in Marxist democratic
theses and evolves towards a position of empowerment of the people by giving a
role and voice to society as a whole [4]. Following this statement, the legitimacy of
the creative process would not be an exclusive area of the author, but the people as
a whole would be legitimized to participate in the creative process. In this way, the
participation of the collectives can be measured by their commitment towards and
with the artistic work [5].

The implications of these postulates with the evolution and origins of the Spanish
post-drama towards popular coordinates can be grouped into the following argu-
ments: the preponderant role of the public in the appropriation of the play, the loss of
weight of the intellectual and conventional canons of the minority elite, the creation of
own identities and cultures through the inventive and the free experience and, finally,

the capacity of agglutination or meeting (result of this participation) around an audience that would be fragmented in any other particular context. Here we should also highlight the capacity for hybridization of popular identity with other identities such as ethnic and especially indigenous identities in the context of Latin America [6]. In this way, the post-drama begins to incorporate diverse cultural elements from the different identity sectors of the public and to influence the audiovisual and theatrical productions of other countries. This is what happens with the phenomenon of the post-dramatic television series in the USA.

45.2 Theoretical Framework

Within this descriptive methodological section, we can state that the present work, with a predominance of the qualitative paradigm, has as object of its study the architectural organization of the post-theatre in Spain and its relevant manifestation in the plays of the main authors of the twenty-first century, whose fundamental works are analysed and summarized in certain patterns and characteristics. Then, the same process is carried out with the most canonical television series in the USA, so that both post-dramatic trends can be compared and shortly afterwards the possible influence of the contemporary Spanish post-drama on the phenomenon of American television series can be studied.

The selection of the works of the Spanish post-theatre and the American TV series post-drama is justified because they are all widely representative and canonical in both artistic movements and trends. In compliance with the criteria of justification of a research work, this article is socially relevant because it analyses a concrete and a very important field for certain sectors and also for the cultural industries; it has theoretical value, because it works with several paradigms of the Social and Human Sciences and incorporates them into the conception of drama and post-drama; finally, it is methodologically useful, because it creates a new instrument to collect data, in this case, for the analysis of post-dramatic works.

45.2.1 The (Post-)theatre of the Twenty-First Century in Spain

We hereby present, in alphabetical order in Table 45.1, some of the best-known and most relevant authors on the Spanish scene, including the mention of some important works by these authors. Of course, it is obvious that they are not the only ones, nor necessarily the best among the Spanish playwrights. They are simply very representative authors of the current scene in Spain, and many others could be included that due to the characteristics of this article we are not going to mention in these present circumstances.

Table 45.1 Spanish playwrights panel

	Authors	Plays
1	Angélica Liddell	La falsa suicida; El matrimonio Palavrakis
2	Antonio Álamo	Cantando bajo las balas
3	Antonio Onetti	La calle del infierno; La puñalá; Malfario
4	Antonio Rojano	Füriøså Escandïnaviå; Fair play; Sueños de arena
5	Borja Ortiz de Gondra	Dedos; Los otros Gondra (relato vasco)
6	Eduardo Galán	Maniobras
7	Ernesto Caballero de las Heras	Te quiero, muñeca
8	Eusebio Calonge	Catálogo de cicatrices
9	Gracia Morales	Bailes de salón; Como si fuera esta noche
10	Ignacio del Moral	El viaje a ninguna parte; La gran muralla
11	Ignacio García May	Alesio, una comedia de tiempos pasados
12	Itziar Pascual	La vida de los salmones
13	Javier García Yagüe	Trilogía de la juventud (Co-author)
14	Jordi Galceran	El método Grönholm; El crédito
15	Josep Maria Miró	El principio de Arquímedes
16	José Ramón Fernández	Nina; Mi piedra Rosetta
17	Juan Carlos Rubio	Las heridas del viento; Adrenalina, feniletilamina, oxitocina y otras hormonas del amor
18	Juan Mayorga	Cartas de amor a Stalin; El chico de la última fila
19	Laila Ripoll	El triángulo azul (Co-author)
20	Lola Blasco	La armonía del silencio
21	Lluïsa Cunillé	Barcelona, mapa de sombras
22	María Velasco	Las prosopopeyas; Taxi girl
23	Miguel del Arco	Refugio; Deseo
24	Paco Bezerra	Grooming
25	Paloma Pedrero	Magia café; Pájaros en la cabeza
26	Pedro Víllora	Bésame macho; La misma historia
27	Raúl Hernández	Los engranajes; Los restos Fedra
28	Rodrigo García	Prometeo; Gólgota Picnic
29	Sergi Belbel	Morir
30	Yolanda Pallín	Trilogía de la juventud (Co-author)

Source Orosa

We now proceed to describe what we consider to be fundamental patterns of Spain's dramaturgy in the twenty-first century. To do so, we will follow some conversations, readings or classes by José Gabriel López Antuñano [7, 8] or the exhaustive explanations of Guillermo Heras [9] on this subject and those of the French scholar Sarrazac [10], three highly qualified experts in this field.

Table 45.2 Patterns of Spain's dramaturgy, twenty-first century

	Category	Component
1	Contents	Universal themes or uprooted topics from Spanish everyday life. Rejection of the social, political or economic system. Existential disorientation (ideological, social, political or economic models are lacking) and self-referentiality. New stories/plots. Disintegration of the person who lives in existential solitude or on the fringes as a result of social or family breakdown, illness (AIDS, cancer, drug addiction) or victims of xenophobia, social exclusion or otherness. Describe the society without reflection or search for causes and, therefore, do not intend a transformation of society or behavior, nor do they intend to achieve political commitments from the audience. Not big stories (meta-stories) but little pieces
2	Composition/Juxtaposition (order and chaos, sense and nonsense). Languages	Disappearance of the synthesis or the thematic unit (composition), and replacement by a multifocal perspective through the fragmentary presentation of a plurality of stories, which produces the effects of dissociation, disjunction, diffraction, disintegration, dismemberment and discontinuity. Structural fragmentation. Rational organizations connected to emotional, sensory or dream territories Incorporating a multiplicity of languages, the sign and the image acquire an explanatory importance of first magnitude. The use of references to other artistic practices in search of mixtures and textual contaminations. Approximation between text and (re-)presentation. Post-drama, self-fiction. Exploration of the body and the dance. Use of the virtual realities (especially screens), documentary language. Poetics of subtraction (it is characterized by blurring or hiding the situational, referential and receptive references that make up the theatrical text, as well as dissolving the poetic parameters of the drama: fable, action, dialogue, time, space and character). The reflection on the structure of theatre is part of the theatre itself. Many rhizomatic relationships that prevent synthesis. Openness: is not structural, but using various aesthetic resources

Table 45.2 (continued)

	Category	Component
3	Time and reality	Absence of chronological or linear time Fragmentation of characters, architectures… "Kairos" or present time. Disregard or controversy over the concept of "reality". Positions in conditional or go to potential ones. The eternity of the temporal construction is no longer an object of search and each moment is followed by another
4	Theme and text	Textual autarchy (the predominance of the text) is denied Visuality and multi-disciplinarity of the show besides the text. Thematic fragmentation or dramatic fragmentation of actions on stage. Juxtaposition of ideas against organic unity. Apparent irrationality, self-referentiality, collage Multiplicity and multi-perspectivism. Repeating the opposite of what it looked like before. Ironic and frivolous filters. The synthesis and the thesis disappear (self-referentiality). The text does not show known realities, but perceptions, abstractions of the world filtered in the imagination, to which the author reacts. The dramatic conflict and the conversational character of the theatre disappears. Narration instead of mimesis, monologue, parliament without response; memories, experiences, sensations instead of consequences. Destruction of perspective, simultaneity. Symbols, signifiers (as opposed to meanings). Effectivist rhetoric, dissolution of the text into textuality. An anecdote becomes the subject of a play
5	Characters	Constitution of characters tends to fragmentation or puppets in the hands of the author. Polyphony: many voices that make up the characters, the situations. Breakthrough of the real: the characters become actors. Texts with voices, more than characters. Outcast, unstructured, deformed characters. The character is a voice without psychological traits. Anti-heroes with no moral, social or other ties. Passive attitude in the face of adversity

Table 45.2 (continued)

	Category	Component
6	Scenes	Inconsistency of disciplines and events. Non-hierarchical (but rather horizontality and simultaneity) of topics or speeches. Sensory communication with the viewer. Relations between text and scenes are autonomous and noninterpretive. Reiterations of scenes. Micro-scenes. Daily routines and micro-stories. There is not a representation but presentation: there is a non-conformity with reality. Creative process from the word
7	Dialogues and language	Organizations and non-logical provisions. The truth and the exclusivity of the word are questioned. No causal logic. The text does not belong to the characters but it is poetically distributed among them. Texts are open to the multiplicity of the scene. It is not contemplated the solidity of the characters. The sense is placed in the atmosphere of the language. Marginal speech is mixed with lyrical language. Rhythm of words and silences, the value of the ineffable is up to the reader to reveal
8	Participation and result	Sensitive and emotional communication with the viewer Reflection on the world. There is no univocality. No interpretation, no immediate understanding, open reflection. Physical presence and visuality. Performative dimension (some signs do not explain others). The result is not contained in the text but does not reject the text: it is a stage practice

Source Orosa [11]

45.2.2 North American Post-drama TV Series

To specify the patterns of the North American post-dramatic TV series model, which we will present in Table 45.3, we have analysed multiple works from the beginning of the contemporary TV phenomenon in the USA to the present day. To cite a few examples, which are not exhaustive, let us mention the following: The Sopranos, Sex and the city, The O.C., Lost, Mad men, True Blood, Game of Thrones, The Witcher, The magicians, Watchmen, Black Mirror among many others of enormous prestige, recognition and very representative architectures of this contemporary movement [12, 13].

Table 45.3 Patterns of North American post-dramatic TV series model

	Category	Component
1	Five to seven themes. Unveiling of the themes as the episode progresses. Tendency to the thematic organizational labyrinth	Themes are always in motion, they are not static. Themes are subject to permanent change and, moreover, since there are so many of them and they are subject over and over again to fusions and mixtures between them, as well as to changes or mutations of all kinds, it is not easy to establish with clarity and security what these themes are, to identify them Doubts and intrigues about the constitution, essence and identity of the themes, creating a labyrinthine effect
2	Disclosure and change in the hierarchy of themes	We can go through the work with highly anti-hierarchical spaces in which the themes tend to take on a similar importance. The strategy and attitude regarding this issue goes through a concrete philosophy: to make the present moment the decisive and truly important thing
3	Dismemberment and fragmentation of themes	The basic forces of a dramatic nature (protagonists, antagonists…) are fragmented into each of their components and come to life independently and end up, many times, forming or constituting their own autonomous themes
4	Mutant themes. Obliqueness in the presentation of the themes. Discontinuous or non-parallel development of themes	The themes are mutating, changing in nature and substance over and over again. One enters the new topic in an indirect, oblique manner, linked to another issue from which one moves on to the new topic in question. The mutant theme can be developed in a way that is intertwined with other related issues that are entered into indirectly so that this theme becomes other ones. The development of the themes in time is not synchronous or, at least, does not run similar or adjusted to the rhythm of the different contexts
5	Change of roles of the characters in relation to the dramatic forces (agonist, antagonist and deuter forces). Fragmentation and deconstruction of characters	One and the same character can play a role as a protagonist within one of the themes of an episode and shortly afterwards go on to perform other functions as a deuteragonist or as an antagonist and suddenly become a dramatic target There is a permanent reinvention and multi-perspective of the characters throughout this new model

Table 45.3 (continued)

	Category	Component
6	Conflict and other matters	Oppression would be one of those substances that is always present within the teleserial discourse. And this burden, this substance or component, would be an element formed, in turn, by two others: tension and agon, that is, doses or traces of confrontation
7	Permanent change. The destructuring of dramatic categories. The compositional breakdown. Communicative and artistic architecture: forces of dramatic tension	The decategorization or contamination of the dramatic concepts opens in the new model the doors towards the total freedom, towards a creation without barriers guided only by the impulse of the moment, the intuition, the creative formal eagerness The technical form yields its privileges and supremacy to the dramatic tension in order to give unity to so much centrifugal forces and compositional breakdown

Source Orosa [14, 15]

45.3   Discussion and Results

45.3.1   The Influences (or the Advance in Time) of the Post-theatre in Spanish Language to the Post-drama of the Current American TV Series

Both expressions to which we refer, the Spanish post-theatre and the American TV series post-drama, take place in different contexts. The first one in the scene, any kind of scene, and the second one on the TV screen. Therefore, it is clear, there are dissimilarities between both: different resources and techniques, distinct objectives, dissimilar results. But there is something in common with both artistic manifestations, beyond the means and contexts in which they operate, and that is apparent in the notes or patterns expressed above (in Tables 45.2 and 45.3). And that "something" that is given in common is either an influence of the dramatic culture in Spanish language on the American one (directly or through other theatrical productions that are also a result of the same Spanish culture) or it is, at least, an advance in time to what is happening in the post-drama of the TV series in the USA.

Unambiguously, we refer to the fact that both artistic phenomena end up in a categorical rupture, a decategorization, a deconstruction of the categories typical of the dramatic Greek-Elizabethan-European classicism. This phenomenon, in both movements, is driven by a desire and need for seduction (of the public and commercial) and, at the same time, by the imperative to act and express themselves according to the needs of our time. Not because we want to place ourselves in our time or update something, but because the human being of our time lives, feels and thinks

the world differently and anxiously seeks the way and the means to communicate in a personal fashion, from the depths of his or her being. And the result is in both cases, in the two artistic tendencies we are dealing with, that a new phenomenon is created (different from the previous one, the dramatic Greek-Elizabethan-European Western one): a new show in the post-theatrical scene and in the post-dramatic screen that has the characteristics we have described above in Tables 45.2 and 45.3. But the very essence of that change consists in the creation of a new post-dramatic and spectacular model for the two tendencies we have been describing and analysing from the deconstruction of the dramatic categories typical of the tradition [16].

45.3.2   All-Encompassing Point of View (Political Chronotope) and Its Background in Tradition

In a profound but immediate way, it is natural to ask ourselves about the perspective from which we can understand all these characteristics and patterns to which we have been referring, that is to say: from where, from which place this new and common vision to both scenes that we are dealing with is born. Because by pinpointing that chronotope, it will be much easier for us to understand the phenomenon and the similarity of the two trends.

Now then, this chronotope has two different dimensions (both linked to the Spanish tradition), either of which lead us to a quick understanding of the notes of the Spanish and North American post-drama. On the one hand, a political-mystical chronotope, by virtue of which we can contemplate the scene beyond time and space, simultaneously, from a collage perspective, playful, spectacular, nonlinear and absent of hierarchies or unitive rationalisms. On the other hand, a political-popular chronotope, around which the celebration of something (a saint, a phenomenon of nature) boils in an improvised and independent way for each of the participants, not previously rehearsed. Either of these two visions, and both at the same time, explains the origin and nature of this phenomenon that is characteristic of contemporary art. We recommend reading the notes of Tables 45.2 and 45.3 from this perspective to see now the illustrative common thread [17].

In fact, all these characteristics that the above-mentioned chronotope brings together have their origin in the festive and popular character of Spanish dramatic celebrations from the Middle Ages (very narrative, spectacular and absolutely different from the Greek tragic tradition) through the Spanish Baroque (decidedly libertarian, impulsive, seductive and anticlassical). See in this respect the references cited below from Orosa where these historical aspects are touched upon in greater depth [18].

45.3.3 U.S. Theatrical Industry Policy and Spanish Language Culture

One of the situations that is lived in the scenic and audiovisual industry of the USA, not infrequent in the spectacles of our time, shows that it is necessary to have novelties, surprises and an important dose of seduction by imposition of circumstances, not only playful but also financial of the productions. The (post-)dramatic techniques in Spanish language are much more open, popular, free and impulsive than those of the Elizabethan dramatic art and, for the same reason, they better assure the future of the North American cultural and audiovisual industry with the integration of a sense of spectacle that is rather characteristic of the dramatic identity in the Spanish language.

45.4 Conclusions

According to the thesis that we were considering in this article: from a constructivist political perspective, participatory and open, the comparative analysis between the patterns of contemporary post-theatre in Spain and the characteristics of the post-drama of American television series is validated, from which it can be deduced either the influence of the Spanish model on that of the USA (because it was the first earlier in time) or the impulse of other anticlassical factors or products derived from Spanish dramatic culture on the post-dramatic and teleserial American identity.

The chronotope (place and time) from which the Spanish post-theatre is narrated: political-mystical (collage) or political-popular (popular narration from the party) is shared by the teleserial phenomenon of the American post-drama.

The reason for the separation of Spanish dramatic culture from Greek and Western one is its narrative and spectacular origin in the staging of medieval Spain, which led to an anticlassical and libertarian art in the Golden Age highly distinctive of the Spanish cultural identity.

The techniques of Spanish drama, different from those of Greek one and therefore from the dawn of tragedy for the West, are much less rigid and more popular, more seductive than the Elizabethan, and therefore serve much better the purpose of the American cultural and audiovisual industry: to ensure its future, both playful and financial, even if this means renouncing its dramatic tradition and giving way to the hybridization of its own culture with that of the Spanish language spectacle, which is much more innovative and captivating for the great masses of spectators nowadays.

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Chapter 46
Neuromarketing as a New Methodology for Broadcasters: A Comparison of European Public and Private Channels

Verónica Crespo Pereira and **Jorge Cruz-Silva**

Abstract Neuromarketing becomes an allied methodology in market research, for communication and advertising due to its capability to offer individual's insights often hidden to traditional qualitative methods. Neuroscience techniques are trendy among the biggest broadcasters worldwide. Entertainment industry seeks new formula to maximize the efficacy of its production. This paper offers literature review that discusses an implementation of innovative neuroscience methods by private and public European Service Broadcasters, and the potential use of neuroscience to establish rules in order to adapt to audience's preferences. The research considers how key aspects for cognitive processing and emotion may positively impact in the design of transmedia content. This paper from its methodological standpoint, studies the implementation of innovative neuroscience methods and analyses how neuroscience contributes to a deep understanding of media experiences effects on individuals. Evidence shows that European broadcasters employ neuromarketing mainly limited to two purposes: testing commercial spaces and entertainment projects. Data shows that audience participation, content redundancy and emotional engagement seen on social TV and alternative screens are productive to create efficient experiences.

46.1 Introduction

The advances in the field of neuroscience and clinical technology in the last decades have changed the possibilities of marketing research. Combination of neuroscience and neuroimaging research techniques raise neuromarketing [14]. This is a discipline that seeks a profound knowledge of consumer aspects such as behavior, liking, preferences or decision-making processes in relation to marketing stimuli. Neuroscience in social research allows to identify cognitive and emotional processes that drives

V. C. Pereira (✉)
Universidade de A Coruña, 15008 A Coruña, España
e-mail: veronica.crespo@udc.es

J. Cruz-Silva
PUCE, 171105 Quito, Ecuador
e-mail: jacruz@puce.edu.ec

market decisions that rest hidden information to classic research Neuromarketing techniques are able to register unconscious mental processes that humans cannot access in traditional research [34]. There is a long tradition in the adoption of new and pioneering methods for a better understanding of people's behavior in media and advertising inputs [28]. Although the first attempts in the employment of physiological techniques to approach audiences in the 60 s and 70 s were not fruitful, the limitations that avoided the impulse of neuromarketing at that time was overcome decades later [1].

In the last years, the progress in the incorporation of a multidiscipline approach to study the brain, the improvement of non-invasive neuroimaging technologies and the increase of knowledge of maths and computing science data processing have produced an impressive revolution in the knowledge of the human brain and created a new scenario for neuromarketing research. Therefore, the neuroscience methodology has again emerged in social sciences areas such as advertising and television. In this regard, the media industry has started to incorporate innovative clinical technologies for a better comprehension of the human brain in order to derive and effectively manage deeper insights of consumers and audience.

Traditional broadcasting audience measure system was focused on the economics of attention and exposure to the audience desired. Data obtained with classic systems was reduced to the number of people exposed to the content in complement to qualitative data such as demographic profile [33]. The decline in the value of classic measuring systems has increased broadcaster's interest in developing innovative research methodology over audience preferences and liking [9, 11]. Neuroscience has started to be part of television research to shape the current media environment and call into question old-fashioned measurements and metrics of audiences. In this regard, worldwide broadcasters have begun to adopt neuromarketing as a research method due to its ability to optimize contents and provide audience valuable experiences. This article explores how private and public European media companies are encouraging the introduction of neuromarketing methodology to analyze audiences. More profoundly, the paper explores the potential and application of neuroscience in the design of efficient television contents and commercial spaces by European broadcasters.

46.2 Methodology

The aim of this paper is to offer a comparative study about the employment of neuromarketing research among private and public European broadcasters to study TV audiences and to address the capability of neuroscience to offer new metrics and to increase the effectiveness on commercial spaces and TV contents. An in-depth review about the scope of neuromarketing on broadcasters is provided from peer-reviewed articles indexed in the academic databases: Scopus and Web of Science, and database WARC which allowed authors to obtain studies media research financed

by broadcasters. A total of 54 articles and documents were selected, encoded and classified.

This research is composed of two main sections. In the first stage, the study focusses on a first approximation to the real implementation of innovative neuroscience methods by private and public European Service Broadcasters. A descriptive and explorative literature approach of the objectives and reasons behind the employment of neuromarketing by broadcasters is provided. In a second phase, the paper presents an analysis regarding how neuroscience contributes to a deep understanding of media experiences effects on individuals and its potential to establish rules for adapting to audiences' likes and preferences for an efficient content design and optimization of new TV experiences.

46.3   Results

46.3.1   Neuromarketing on TV

Although much needs to be done in the years to come, neuroscience has produced the highest scientific advance around the understanding of human brain in the last decades [2]. Neuroscience has demonstrated that unconscious mental processes and emotions guide human behavior and pure cognition does not exist without emotion. Cognition processes involve emotion, and emotions are stated to impact highly over cognitive processes such as perception, memory and attention. The understanding of the value of emotion in decision-making provoked many consequences in paradigms in a considerable number of research fields such as economics [26] and media research [4].

As it has been demonstrated that emotion exercise influence over decision-making, neuroscience tools are the focus of communication research. The introduction of this new methodology in marketing obeys two main rationales, and the promise of an efficient research in terms of cost-benefit and the revelation of useful data all along the phases of a product production [43]. This methodology is also of interest to television since it is conferred to have the ability to predict when a content will be remembered or liked [21]. Neuroscience has the capability to understand how individuals react to audiovisual inputs. Its tools aim at identifying neurophysiological activation during media stimuli processing to associate it to emotional, cognitive and psychological processes [15]. In other words, these methods allow researchers to monitor neurobiological audiovisual content processing in real time and, therefore, to track levels of attention and emotion [42, 29].

The comprehension of audience response to TV content from a cognitive and emotional processing perspective allows to increase the efficiency of contents at helping with the evaluation and selection of audiovisual features such as visual elements or timing in the content [16]. In this regard, neuromarketing offers the possibility to maximize TV content and TV promotional campaigns, improve commercial

spaces and optimize viewing experiences [8]. There are many potential benefits from neuromarketing research for broadcasters. The following pages will compare public and private broadcasters in the employment of these techniques.

46.3.2 Neuromarketing by Public and Private Broadcasters

Neuroscience has driven the European public media to introduced alternative methodological strategies to designing entertainment contents to a worldwide audience. In this context, BBC has incorporated neuromarketing to determine cultural differences over contents [9, 11]. Many public and private broadcasters in Europe have incorporated neuromarketing techniques with different purposes that can be summarized as:

1. To test fiction TV shows (entertainment products)
2. To test the efficiency of commercial spaces (linear TV and VoD platforms).

Results make visible that innovative techniques are used for the improvement of entertainment contents and advertising spaces by private broadcasters.[1] Certainly, the routines of the marketplace urge broadcasters to invest in studies that attract more commercial benefits: minimize risk from the most expensive content (prime time TV series and top ten shows) by creating more matching entertainment product and maximize the exposure to advertising (contextualized advertising on TV content).

However, broadcasters must adapt to changes in broadcasting landscape and global production context. The competitiveness of broadcasters is no longer reduced to geographical limits. Digital distribution makes national channels compete against international ones and new competitors (OTT). Traditional broadcasters must fight for the attention of audiences who are investing their time in many alternative options to TV (social media, video games…). Television distribution requires a new global online broadband-enabled paradigm [13] to guarantee their position in the marketplace. In this context, there are no much evidences around the adoption of neuromarketing by European broadcasters for researching new media experiences such as new platforms, social media, second screens or videogames. On the contrary, North American private broadcasters have already employed neuroscience to study immersive platforms for advertising purposes, social TV on millennials and its impact in viewing, second screens influence on programming and advertising, ad efficiency in social media and alternative devices [8].

The mission and content of public broadcasters differ from private ones. In the context of public media crises, public broadcasters must preserve the general interest and commitment to society while being competitive [7]. PSM must produce distinctive and valuable content under the mission of entertaining, informing and educating. European public service television is also incorporating innovative methodologies

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[1]For a deeper understanding of these, please refer to a table in the following link: https://bit.ly/3gvuqFF.

in their research laboratories. Big Data has burst into public broadcasters to study audiences and to make better decisions in terms of products and services [18]. Neuroscience is gaining visibility in marketing but as a complementary methodology. It must be said that the incorporation of traditional market research methods is recommended to complement the results. Evidences to date manifest that insights offered by neuromarketing may be "too basic" and the interpretation of data too hard to obtain results completely satisfactory [41].

Again, as seen on European private broadcasters, there is no proof that neuromarketing is being used for designing new television experiences in new platforms. Neurophysiological tools by PSM are meant to create TV products aligned to the preferences of audience mainly on TV shows with entertainment purposes. According to data, only one channel (RTÉ) has employed psychological testing to improve commercial spaces. Besides public broadcasters must provide educative content, there is no evidence that this type of projects has been tested by neuromarketing techniques.

46.3.3 Neuromarketing and New TV Content Experiences: Transmedia, Social TV and Videogames

As seen before, public and private broadcasters are implementing neuromarketing methods in commercial spaces and TV content, however, neuromarketing brings more potential benefits in areas such as transmedia projects and social TV, among others. Understanding how brain processes, audiovisual stimuli would help companies to reduce the risk associated not only in the creation of entertainment prototypes but to maximize the television experience.

TV innovative projects such as transmedia involve storytelling and content distribution across multiple media platforms leading immersive experiences [25]. Neuroscience has the potential to facilitate relevant insights to the creation of more complex TV products in an extremely competitive media scenery [12]. Innovative forms of storytelling and distribution seen nowadays on TV such as transmedia becomes a new opportunity for neuroscience to propose patterns for more effective projects. From a biological perspective, humans are predisposed to stories [31]. Stories can exert massive cognitive and emotional implications for people. Therefore, it is said to be one of the best narrative forms to engage and persuade audiences. But a story requires a certain way to structure information to be effective in terms of creating memory and meaning [9, 10, 22]. And transmedia needs their own specificity for maintaining audience interest. Transmedia behavior trigger is emotional engagement.

Engagement has been employed as an index of TV performance. Emotional engagement has been defined such as the unconscious amount of feeling in relation to an input [23]. Also, it has been told to be the motivational experiences that a person has with a product [6] and to happen when a situation creates the "sense of personal relevance" [38]. Engagement has become relevant from a managerial point

of view due to its correspondence with competitiveness and profits [5]. To sum, emotional engagement elicits audience behavior and effective managerial decisions. Nowadays, this index is employed as a qualitative performance index that provides relevant information for media. Emotion is a driver for audience behavior to stay focused and engaged to content. Audience involvement is vital for cross-platform products such as transmedia. Success depends on attracting audience's interest, active participation and motivation to continue the story across different platforms. In this context, emotional engagement would stimulate migration to other platforms.

The creation of immersive and interactivity experiences on the digital sphere is a must for media. Transmedia is a strategy for channels to become more visible among young audiences and among all type of products (informative, entertaining and educative). The exploitation of multiple distribution platforms, along with the ludic aspect associated with TV, provides impetus for innovative educative TV content. Providing different media experiences have consequences related to behavior. Changes in relation to intellectual, physical and /or attitudinal goals are the aim of transmedia learning [36]. Emotion is an key to driving behavior as aforementioned. It impacts positively in long-term memory [17, 27], the participation of the audience [36], attention and curiosity [32].

46.3.4   The Role of ICT

As well as emotion plays a vital role in learning process, so does information and communication technologies (ICT). There is great neuroscientific academia research contribution around the impact of different type of screens and passive and dynamic visual displays on brain processing [30, 37]. In this context, transmedia stimulates interactive and participative experiences that have positive consequences for audiences in terms of emotional and cognitive impact.

Immersive experiences and proactive behaviors provided by ICT are the second pillar of transmedia process. Transmedia projects develop and adapt the story across multiple platforms such as social media, video games and apps, among others. The proliferation of second screens while watching TV had good results in terms of engagement. TV immersive experiences such as Twitter actions by broadcasters have been demonstrated to affect positively on emotion and engagement with TV programs [6, 40]. Studies have demonstrated that second screen viewing apps have the capability to increase engagement with TV products when complementing contents, thus, social viewing is more engaging than solo viewing [24]. Second screens have also been related to long-term memory [6, 35].

Multi-cross screens are positive to redundancy. Redundancy, interaction, customized content plays an essential role on learning projects [44, 9, 11] and may be useful for broadcaster purposes. The potential of alternative screens is positive in terms of maximizing content. In fact, neuromarketing has already been employed to study the impact of advertising on recommended news in online context and second

screen sync apps [8]. New television experiences are on the eye of North American channels. Video games offer environments based on learning by doing through immersion experiences [39] and changes in cognitive, motor and perceptual skills [19, 20, 3]. Immersive experiences are the future of television. A greater comprehension around the design of rules and mechanics of video game features such as challenge, control, curiosity, social interaction, fantasy, competition, collaboration [20] and maximization of aesthetic elements such as colors, textures and placement of objects would become commonplace for driving engagement and, thus, increasing learning and impact positively on memory.

46.4 Discussions and Conclusions

Due to its capability to reveal neural and physiological mechanisms associated with emotion and cognition, neuromarketing has an interesting potential to test new media projects and ITC (transmedia, second screens, social TV and video games). Emotional engagement elicits cognitive (attention and memory) and behavioral effects (participation) over audience. Understanding how audience processes different elements of a TV content across multiple media platforms would result in the maximization of immersive experience product design and the optimization of new digital platforms.

Besides the benefits of neuromarketing for the creation of the TV of the future, evidence shows that European broadcasters employ neuromarketing mainly limited to two purposes. Investment on neuro-research is generally reduced to the study of contents that brings more benefits, mainly entertainment TV shows followed by advertising spaces. In the context of lack of PSM legitimacy, the present market research landscape offers alternatives to produce educational effective content in digital platforms. PSM are increasing the use of biometric methods with the aim to create more matching entertainment contents to audience's preferences and liking. This trend is also seen on European private channels. The routines of the marketplace urge broadcasters to invest on studies that attract more commercial benefits and minimize risks. This approach, showed in this paper, can be matched with future research regarding the relations that neuroscience can have with abilities in content production, interaction management, audience market research and analysis and other traditional and new media-oriented endeavors.

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Chapter 47
COVID-19: A Political Reading of the Fear of Infection

Erika Jaráiz-Gulías , **María Pereira-López** , **and Diego Mo-Groba**

Abstract How can we explain the fear of coronavirus infection from socio-political elements? In this study, we hold that the fear of infection has two dimensions: the first is health related, a natural reaction to a threat to the health of people and falls outside the scope of this study. The second has a socio-political nature as a reaction to the management of the pandemic and its consequences for the social well-being of citizens. This latter dimension will be the focus of our study. Using the survey 'Study on the Spanish Perception of the Management of the COVID-19' conducted by the Team of Political Research during the most critical moments of the pandemic, we consider that the personal economic perspectives for the future and the political management of COVID-19 have a direct effect on the fear of infection.

47.1 Introduction

The global pandemic declared by the World Health Organization (WHO) as a result of the spread of the coronavirus (COVID-19) has led to a number of crises that have had consequences for the political and economic gears. The political responses in terms of speed, spread or depth are as varied as the political systems that have implemented them. In the case of Spain, it has been a true challenge. For the second time, a state of alarm has been declared[1]—the longest in recent Spanish democracy—placing the state of autonomies under a stress situation never seen before. The creation of a single command by the central government, a strained health system and a tense political climate add interest to this analysis. The case of Spain is not different from other EU countries. The incidence of COVID-19 on the system has had devastating consequences on the population: a high number of deaths, negative economic growth,

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E. Jaráiz-Gulías (✉) · M. Pereira-López · D. Mo-Groba
Universidad de Santiago de Compostela, A Coruña, Spain
e-mail: erika.jaraiz@usc.es

[1]Rodríguez Zapatero's government declared the state of alarm on 4 December 2010 as a consequence of the so-called air traffic controllers' crisis. In that case, the state of alarm sought to ensure the fundamental right of free movement across Spain.

rising unemployment and poverty, widening inequalities or new social gaps. The question is what the political implications are of the COVID-19 crisis.

Recent studies establish a connection between government decisions such as lockdowns with trust and citizen satisfaction. Conclusions differ and no consensus has been found in the studies published so far. For instance, in the case of the Netherlands, the lockdown has led to an increased satisfaction with democracy and trust in the government [1]. However, in the case of Spain, it has strengthened the preferences for technocratic governments with stronger leadership [2], which may indicate a lack of confidence in the political class and the democratic institutions.

The risks of COVID-19 go beyond a threat to health. The curtailment of individual civil rights wears down social capital and leads to economic uncertainty [1, 3] as a consequence of the slowdown of economy.[2] In this respect, the work by Foster and Frieden [4] already pointed out that economic factors whether at an individual and national level had a negative effect on trust in European governments during the 2008 economic crisis.

Although we cannot strictly speak of economic effects on trust in politics, we may speak of fear of contagion as a psychological construction. Fear of COVID-19 infection may have two readings: a first reading has to do with the health of individuals while the second has to do with its social, economic and political consequences. According to the affective intelligence theory (AIT), fear of COVID-19 infection would work as an adaptation and reaction mechanist before a threatening situation [4–9] thus making citizens more wary and more cautious before risks.

The measures taken by the national and regional governments as well as the performance by the main actors and institutions involved in the management of the COVID-19 crisis have an effect on fear. This fear becomes a learning mechanism on the performance of political actors [10]. These preferences, assessment and perceptions have a deeper emotional reading. As the AIT demonstrates, citizens take their decisions under a strong evaluation of the circumstances around them [11, 12], activating the monitoring system and 'redirecting attention and higher reasoning functions when a potential threat to one's well-being is detected' [13].

47.2 Hypotheses and Objectives

The main objective of this study is to spell out the political components of the fear of COVID-19 infection in Spain. The specific objectives are put forward as research questions: (a) what are the socio-political elements of fear of coronavirus infection? (b) what is the socio-structural base of the fear to be infected? (c) is there an accountability component that may be associated to fear of infection; (d) or, whether or not disaffection towards politics has consequences for the fear of a COVID-19

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[2]Spain's gross domestic product (GDP) fell by 18.5% in second quarter (April–June) 2020, compared to the previous three months, due to COVID-19 lockdown. This rate is 13.3 points less than in the first quarter (−5.2 points). Source: Instituto Nacional de Estadística (INE).

infection. The objective is to identify the political, social and economic elements that may play a role in its triggering. The meaning of the fear of COVID-19 contagion is considered to go beyond the concern for personal health as it is directly connected to political and social elements.

> H1: Poor personal economic prospects for the future would impact on the fear to COVID-19 contagion. This first hypothesis is closely connected to the social and economic situation, which is the direct result of the lockdown and the economic hibernation. The fear to infection is connected to the assessment citizens make of the management of the health crisis by the different governments (central government, autonomous communities and town or city halls). In turn, this is linked to a loss of trust in institutions and politics, thus, exonerating healthcare professionals from any responsibility.
> H2: A worse rating of the measures taken by the governments (central government, autonomous communities and city/town halls) would be associated with greater fear of COVID-19 contagion.
> H3: Citizens do not associate healthcare professionals with accountability.
> H4: The negative relation of citizens with politics expressed in form of distrust in institutions, political disaffection or negative feelings would be more related to a greater fear of coronavirus contagion.
> H5: The notion that Spain was not ready for a pandemic would increase fear of infection.

47.3 Data and Methodology

For our research data from the survey 'Study on the Spanish Perception of the Management of the COVID-19', made by the Team of Political Research of the USC during the lockdown declared in Spain. The survey was conducted for a period of 4 weeks, from 30 March 2020. The questionnaire was administered using a CATI[3] system with a sample of population of 1000 interviews[4] adjusted for age and sex.

We started with a descriptive analysis to provide a first overview of the fear of infection to move on to two more complete and robust analyses. Firstly, using an analysis of bivariate correlations that will shed light on the associations between the fear of infection and the socio-political components, and secondly, using a multivariate analysis by modelling fear under a multiple linear regression technique to decipher the components of the fear of infection [14].

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[3]As a consequence of the state of alarm, the CATI system was used in this survey with remote field management and monitoring. All interviewers teleworked from their homes. Sampling error is $\pm$ 3,1% for the least favourable scenario, $p = q$, (50%), and a level of confidence of 95%.

[4]Sample error is $\pm$ 3,1% for the least favourable scenario, $p = q$, (50%), and a level of confidence of 95%.

47.4   Independent Variables Used in This Model

The fear of COVID-19 infection scale was used[5] as the dependent variable. As independent variables, socio-demographic variables were used, including sex (dummy), age (continuous), education (ordinal) and occupational status (dummy). Contextual variables on the economic and political scenario were also used: assessment of the current and future personal economic situation (0–10); of the current and future economic situation of Spain (0–10); of the current and future political scenario in Spain (0–10 scale). As to the management of the COVID-19, the assessment of government decisions was also included, among them the degree of agreement with the lockdown measures and their hardening (0–10 scale); the assessment of the measures taken by the government of Spain of their autonomous communities and the local authorities (0–10 scale); the actions taken by Spain as a State (0–10 scale); whether the government should have acted earlier (dummy); and on the preparedness of Spain for a pandemic (dummy). As to the living habits during the lockdown: home exercise, online activities, health and prevention, audio-visual entertainment, the care of children (dummies), and an assessment of family life (0–10 scale). The effect on feelings towards politics is measured: boredom, distrust, indifference, annoyance, commitment, interest and enthusiasm. But also attitudes like interest in politics (0–10 scale), trust in institutions (0–10 scale) or satisfaction with democracy (0–10 scale). We also included disaffection towards politics (0–10 scale). As political variables: ideological self-positioning (0-10 scale), partisan identification (dummy) and leadership (0–10 scale). As to transparency and information: assessment of what extend respondents believe they are informed; of the information governments are giving; the media; and the transparency of the Government of Spain (0–10 scale). Other variables included in the analysis have to do with the assessment of the health authorities and the Spanish National Health System (0–10); or the work/performance of the law enforcement agencies (0–10 scale).

47.5   Results

Exploratory data provide an approach to the socio-structural dimension of fear of COVID-19 infection.

In Fig. 47.1, the data of respondents who reported in our study that they were infected is compared with the perception of whether they believed at some point that they were infected. The greatest number of infected was found in the second week

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[5]The questionnaire includes three questions on the COVID-19 infection. The two first ones are dichotomic (1 Yes −2 No). The first asks whether the respondent was infected and the second whether the respondent believed he or she was infected at some point. To measure the fear of infection, the following question was subsequently made: "Were you afraid of being infected? In a scale of 0–10, where 0 is not afraid at all and 10 is very afraid.
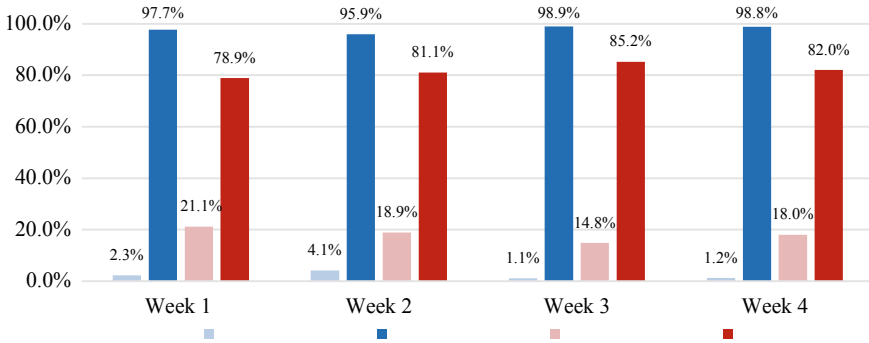
Fig. 47.1. Knowledge and belief that respondents had been COVID-19 infected. (*Source* own preparation from the Study on Spanish Perception of the Management of COVID-19)

of the study. 4.10% of respondents declared that they were COVID-19 infected. The lowest figure corresponds to the third week of measurement (1.10%).

During the first week of measurement, 21.10% of respondents declared that they believed they had been infected with the coronavirus. This indicator decreased during the second (18.9%) and third week (14.8%) and increased again in the fourth week (18.0%). The behaviour of these data reflects the real data of infected people provided by the Ministry of Health as shown in Fig. 47.2, which may indicate autosuggestion caused by the influence of the media.

The fear in Spain of becoming infected is low, but latent (4.16). Standard deviation (3.74) warns of a high polarization of the population as regard to the fear of having been infected. The data on the feeling of fear of the infection were collected 15 days after the declaration of the state of alarm. Therefore, this emotion could be significantly reduced as a consequence of the effect of the lockdown and the information on the progress of the pandemic citizens had. After the first 15 days of lockdown—the
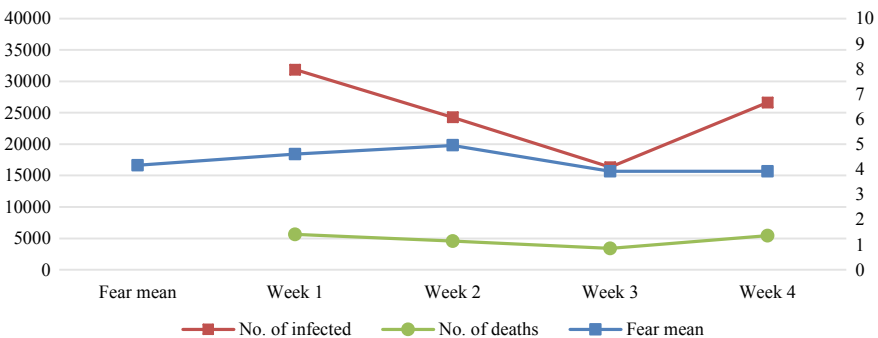
Fig. 47.2. Weekly evolution of fear of COVID-19 infection in Spain (*Source* own preparation from the study on the Spanish perception of the management of COVID-19 and from the data provided by the Ministry of Health)
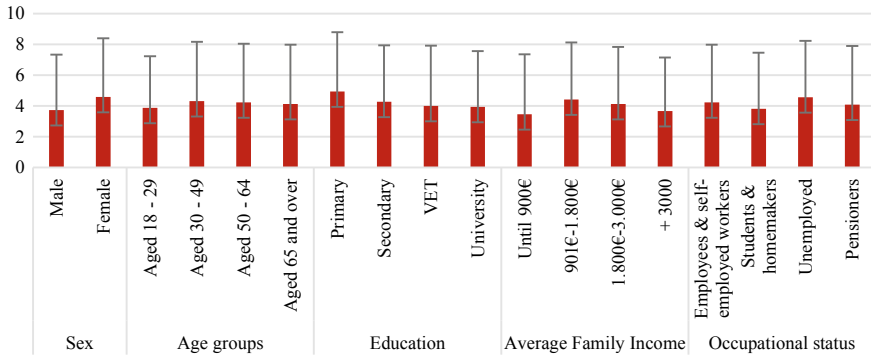
Fig. 47.3. Average values on the fear of COVID-19 infection on the basis of socio-demographic variables (*Source* own preparation from the Study on the Spanish Perception of the Management of COVID-19)

maximum incubation period for the virus—with no symptoms, citizens would be less afraid of infection. Fear of infection peaked at the second week of the analysis, reaching a mean of almost 5 points. The most significant drop occurred during the third week, when the mean fell to 3.92 points, which is consistent with the real data of infected people and remained constant during the final week of measurement.

Although the assessment of the fear to be infected remained under 5 points all weeks, standard deviation indicated again that there was a great dispersion of scores (see Fig. 47.3), which indicates some uncertainty amidst the population. The question at this point is whether the fear of infection has socio-demographic roots. To this end, a descriptive analysis from the main socio-structural variables was conducted in order to look into the differences on the feeling of fear of infection.

As to the sex of the respondents, men (3.72) were less afraid of infection than women (4.59), a difference of almost one point. As to age groups, indicators show a slight difference between young adults aged 18–29 (3.72) and the other age groups, with closer values.

If we look at education, fear of infection decreases as the level of education increases. As far as level of average income in the family is concerned, the major indicators of fear of contagion correspond to individuals with average income between €900 and €1,800, whereas those who are least afraid correspond to levels of income that do not exceed €900. On the basis of their occupational status, the unemployed (4.57) are those who comparatively have been most afraid of COVID-19 infection, following by employees and self-employed workers (4.23).

47.6 Political Reading of the Fear of Infection

Table 47.1 shows an analysis of bivariate correlations through the measure of the linear dependence of Pearson's correlation (PC) among the variables associated

Table 47.1. Bivariate correlations for the association between fear of infection and the socio-political perceptions

		Fear of infection	Personal Economical Situation	Govt measures	Reg Govt measures	Local Govt measures	National health system	Confidence institutions	Political disaffection	Boredom	Distrust	Indifference	Annoyance
Fear of infection	PC	1	-.150	-.143	-.122	-.105	-.071	-.081	.097	.098	.090	.096	.096
	Sig. (bilateral)		.000	.000	.000	.001	.026	.011	.003	.002	.005	.003	.003
	N	989	925	976	943	919	979	974	951	955	952	956	955
Personal Economical situation	PC	-.150	1	.182	.172	.149	.144	.161	-.128	-.134	-.157	-.111	-.107
	Sig. (bilateral)	.000		.000	.000	.000	.000	.000	.000	.000	.000	.001	.001
	N	925	935	925	892	871	925	924	905	910	910	911	912
Govt measures	PC	-.143	.182	1	.690	.607	.276	.377	-.226	-.130	-.250	-.186	-.221
	Sig. (bilateral)	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	976	925	987	947	924	977	974	953	957	955	956	958
Reg Govt measures	PC	-.122	.172	.690	1	.824	.250	.255	-.211	-.109	-.178	-.197	-.161
	Sig. (bilateral)	.000	.000	.000		.000	.000	.000	.000	.001	.000	.000	.000
	N	943	892	947	951	915	942	939	915	920	919	921	922
Local Govt measures	PC	-.105	.149	.607	.824	1	.226	.235	-.184	-.099	-.144	-.209	-.134
	Sig. (bilateral)	.001	.000	.000	.000		.000	.000	.000	.003	.000	.000	.000

(continued)

Table 47.1. (continued)

		Fear of infection	Personal Economical Situation	Govt measures	Reg Govt measures	Local Govt measures	National health system	Confidence institutions	Political disaffection	Boredom	Distrust	Indifference	Annoyance
	N	919	871	924	915	927	918	919	893	897	896	899	899
National health system	PC	-.071	.144	.276	.250	.226	1	.289	-.143	-.022	-.106	-.037	-.084
	Sig. (bilateral)	.026	.000	.000	.000	.000		.000	.000	.501	.001	.254	.010
	N	979	925	977	942	918	990	975	952	956	953	955	956
Confidence institutions	PC	-.081	.161	.377	.255	.235	.289	1	-.286	-.119	-.231	-.121	-.159
	Sig. (bilateral)	.011	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000
	N	974	924	974	939	919	975	986	953	952	951	952	952
Political disaffection	PC	.097	-.128	-.226	-.211	-.184	-.143	-.286	1	.343	.274	.396	.158
	Sig. (bilateral)	.003	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000
	N	951	905	953	915	893	952	953	962	934	933	933	935
Boredom	PC	.098	-.134	-.130	-.109	-.099	-.022	-.119	.343	1	.490	.414	.247
	Sig. (bilateral)	.002	.000	.000	.001	.003	.501	.000	.000		.000	.000	.000
	N	955	910	957	920	897	956	952	934	966	955	957	957
Distrust	PC	.090	-.157	-.250	-.178	-.144	-.106	-.231	.274	.490	1	.222	.458
	Sig. (bilateral)	.005	.000	.000	.000	.000	.001	.000	.000	.000		.000	.000
	N	952	910	955	919	896	953	951	933	955	963	956	956

(continued)

Table 47.1. (continued)

		Fear of infection	Personal Economical Situation	Govt measures	Reg Govt measures	Local Govt measures	National health system	Confidence institutions	Political disaffection	Boredom	Distrust	Indifference	Annoyance
Indifference	PC	.096	−.111	−.186	−.197	−.209	−.037	−.121	.396	.414	.222	1	.088
	Sig. (bilateral)	.003	.001	.000	.000	.000	.254	.000	.000	.000	.000		.006
	N	956	911	956	921	899	955	952	933	957	956	965	957
Annoyance	PC	.096	−.107	−.221	−.161	−.134	−.084	−.159	.158	.247	.458	.088	1
	Sig. (bilateral)	.003	.001	.000	.000	.000	.010	.000	.000	.000	.000	.006	
	N	955	912	958	922	899	956	952	935	957	956	957	966

Source own preparation from Study on the Spanish Perception of the Management of the COVID-19

(fear of COVID-19 infection and economic, social and political variables). Only statistically significant variables are shown. The first correlation has a negative sign, which indicates that a greater fear of contagion is associated with a worse economic outlook for the future (−.150). Contagion goes beyond personal health and has a social component because of the consequences resulting from the economic crisis. The political and management measures to prevent the spread of the virus and thus stop the chain of contagion present a negative correlation: a greater fear of infection is directly associated with a negative assessment of the measures taken by the government of Spain (−.143), the autonomous governments (−.122) and city and town halls (−.105). Citizens know who those primarily responsible for the management of the pandemic in Spain are. The relation between fear of contagion and political accountability in a pandemic scenario is closely connected. A greater fear of contagion entails a lower scoring of the Spanish national health system (−.071). These views on one of the flagship public policies of the welfare state were replicated in the perception citizen have of institutions and

Spanish politics. This means that the greater the fear of a COVID-19 contagion, the lesser the trust (H4) in the democratic institutions (−.081) and within this logic, the correlation between a greater fear of contagion and a greater disaffection with politics (.097) is significant. In view of the results, the feelings and attitudes towards politics become negative. Data indicate a positive association between a greater fear of the virus and an increase in boredom (.098), distrust (.090), indifference (.096) and annoyance (.096) towards politics (H4).

47.7 The Analytical Composition of the Fear of Infection

After ascertaining that there is a connection between having been afraid of the COVID-19 infection and elements of a socio-political nature, we will look next at the composition of the fear of infection, or to put it differently, which of those socio-political elements have conditioned the fear of COVID-19 infection. The model (Table 47.2) is explained in 11.7% (pseudo $R2 = .117$) from statistically significant independent variables following validation. Although the global explanation of the models is remarkably low, it should be noted that the above indicator exclusively corresponds to the socio-political dimension of fear of infection. As the health dimension and its corresponding implications for personal health are not measured because they fall outside the scope of this study, the remaining percentage, which might complete the explanation, is not included in the analysis.

The variable that best explains the final model is the belief of having been infected, which increases the fear of the infection (.154). Let us remember that this variable behaves mimetically to the real infection curve (Figs. 47.1, 47.2).

Sex follows as the second variable with explicative weight, the only significant variable of a socio-demographic nature. The fact of being female (−.151) as opposed to male results in an increase in the fear of COVID-19 infection. This variable

Table 47.2. Multiple linear regression model for fear of COVID-19 contagion

	β standardized	Deviation of error
Sex (Ref: female)	−.151***	.237
Assessment of future personal economical situation	−.116***	.055
Assessment of COVID-19 measures Govt of Spain	−.070	.042
Assessment of COVID-19 measures regional Govt	−.075*	.341
Responsibility of scientists	−.076*	.784
Responsibility of the Minister of health	.089**	.256
Home exercise	−.087**	.246
Health and prevention	−.124***	.373
Believed to have been infected	.154***	.313
Spain is prepared for the pandemic	−.081**	.586
Constant	6.527***	.414
R^2 adjusted	.117	

Source own preparation from the Study on the Spanish Perception of the Management of COVID-19.
Levels of significance are the following: * $p < .05$; ** $p < .01$; *** $p < .001$

(Table 47.1) already presented certain differences in the means on fear of infection, although they were not statistically significant. The third explanatory variable, the fact of not engaging in health and prevention-related activities as a living habit during the lockdown increases the fear of coronavirus infection (−.124), in contrast with home exercise activities (−.087).

The assessment of the future personal economic situation is the fourth explanatory variable, thus, confirming another of our hypotheses. Data indicate that an increase in the assessment of the future personal economic situation will diminish the fear of infection (H1), so as the perception of the future economic situation improves the fear to be infected decreases (−0.224).

To believe that the Minister of Health (H2) is one of the persons responsible for the management of the coronavirus crisis increases the fear of infection (.089), whereas believing that scientists (H3) are not primarily responsible for the management of the coronavirus has the same effect (−.076). This is closely connected to the management of the pandemics. The feeling that Spain was not ready for a health crisis (COVID-19) increases the fear of infection (−.081). The evaluation of the measures for its containment and minimization of its effects also has an impact on the fear of infection (H2). The higher the assessment of the measures taken by the governments of the autonomous communities, the lower is the fear of infection (.075). Finally, a higher positive assessment of the measures taken by the Government of Spain reduces the fear of COVID-19 infection (.070).

47.8 Conclusions

The fear of COVID-19 infection goes beyond personal health. It entails social, political and economic considerations. Fear comes into the picture as defensive psychological reaction to adversity [4–9], in this case, the pandemic caused by the coronavirus. This has led us to draw the following conclusions:

1. Fear of infection knows of no socio-demographic differences. It is not part of a defined social structure. The only exception is sex as the fact of being female is linked to a greater fear of infection. This has a sociological reading as it is one of the groups that could suffer most intensely the social inequalities resulting from the pandemic, like wage inequality.
2. The assessment of the management by politicians and institutions has a direct association with fear of the virus. Citizens see politicians as those having greater responsibility in the management of the pandemics, thus, exonerating scientists of this responsibility.
3. The above assessments of the main political actors and their association with the fear of infection have its own impact on the attitudes of citizens towards politics, thus, encouraging negative feelings towards it. This also leads to a disaffection towards politics and to a loss of trust in institutions.
4. Results indicate that the fear of infection does not depend on right or left leanings, vote preferences or political sympathies. This can be seen in the no significance of the ideological self-position and partisan identification in the regression model.
5. The belief that one is infected as a factor triggering fear is apparent and logic. The same is true for those who consider that Spain was not ready for a pandemic of these characteristics.
6. This lack of trust in political actors, in politics itself and the institutions may be yet another factor, as shown in the correlation analysis, in determining that personal economic perspectives are negative, which would be coherent with the fact that the last increase fear of COVID-19 infection.

These findings raise new questions such as, for instance, what the impact has been of the fear of COVID-19 infection in the domain of political behaviour. Some questions of interest, on the basis of the data provided, are whether political allegiances have changed as a consequence of the health crisis as well as the impact that the management of this crisis has had for the main political leaders.

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Chapter 48
The Lack of Analogic and Digital Information as a Generator of Negative Feelings Towards Politics

Nieves Lagares-Díez [ID]**, Paulo Carlos López-López** [ID]**, and José Manuel Rivera-Otero** [ID]

Abstract Since the last century, various scholars have put forward and demonstrated a number of theories on the effects mass media have on citizens. However, these theories do not pay attention to one of the elements that have become the source of much attention in recent times in the field of political science and communication: the affective domain. In this article, we will approach the feelings towards politics by Spanish population from the point of view of what the effects are of being informed or not about politics. The aim is to find out whether an information deficit on this issue is associated with an increased degree of negative feelings or vice versa. To this end, we will use a battery of seven feelings towards politics. This battery will be subjected to a correlation analysis with the frequency with which political information is followed in the traditional media (radio, TV, press) and the Internet. Besides, we will use mean comparison analysis to find out whether there are differences between the feelings towards politics in those who prefer to inform themselves in digital media, print media or both. Among the main results, it was found that greater exposure to political information is correlated with the fact of showing positive feelings towards politics.

48.1 Introduction

Media play a key role in democratic societies as a well-informed citizenry will be one of the discriminating elements when determining the good functioning of a democracy [1]. Besides, among the classical functions of the media is to make the political community visible [2]. Recently, we have witnessed a process through

N. Lagares-Díez · P. C. López-López (✉) · J. M. Rivera-Otero
Universidade de Santiago de Compostela, Santiago de Compostela, Spain
e-mail: paulocarlos.lopez@usc.es

N. Lagares-Díez
e-mail: mnieves.lagares@usc.es

J. M. Rivera-Otero
e-mail: josemanuel.rivera@usc.es

which the mass media have become yet another political player. Consequently, most of the information they transmit will have certain effects on their audiences, thus determining—in this case—their attitudes towards politics, opinions, behaviours, etc., but also their emotions and feelings—the central issue of this article. Since the last century, several authors have sought to provide an explanation for these effects the media have on their audiences [3]. Particularly, noteworthy are theories such as that by Lasswell [4], who already pointed out that political propaganda has an effect on audiences so that it is able to mould their preferences. Later, this interest in learning the impact of the media will be apparent in the following sentence: 'who says what, through which channel and to what purpose?' [5]. On the other hand, we will see the development of the Agenda Setting Theory by McCombs & Shaw [6] and the well-known theory of Framing, addressed by authors such as Entman [7] or Druckman [8]. This theory underscores the importance of the approach or the framework used to address and present issues as these frameworks will be what will have effects on audiences, as shown by McCombs [9] when discussing the influence news has on our image of the world.

Likewise, citizen exposure to political information is broad. Indeed, apart from traditional media (radio, press and television), the digital society we live in exposes audiences to online content which often results in interaction. On the basis of theories such as those mentioned above, this exposure to information in the mass media contributes to the generation of stereotypes, beliefs or attitudes towards politics that may be negative or positive [3]. But the task of measuring the effects on audience is not easy [10] as we are before 'a subtle, complex process participated by many other forces' [11]. Amidst these, other factors are the elements that precede any reasoning, such as feelings. In this sense, emotions and feelings are a component that is actively sought by numerous scholars when looking for elements that explain and affect a wide range of political behaviours, which include the forming of attitudes, preferences or the processing of information [12]. In this regard, we will use a category that has been addressed in prior political science and communication studies: feelings towards politics. They make up a category with an important affective load [13], with a duration slighter longer than emotions proper [14] and that are directly connected to matters of the political domain. In this regard, [15] feelings are linked to emotions but are distinguishable from them as they are the cognitive component of the emotion made conscious and may extend in time due to one's own personal will.

Potentially, there is the tendency to associate a greater level of exposure, and therefore, of following political information, with a greater level of interest and of generation of positive feelings towards politics, whereas an information deficit may have the opposite effect and even generate frustration and [16]. Therefore, the aim of this study is mainly to ascertain whether there is any association between the feelings towards politics and citizenry's exposure to political information through both traditional media and the Internet.

48.2   Context and Rationale

We will pay attention to the case of Spain after the November 2019 elections. Its relevance is, in the fact that, for a few years now—when back in 2016 the first repetition of the elections in the democratic history of the country occurred—the political arena has been in a process of change that has resulted in increased exposure to political information. The political scenario is now characterized by a greater fragmentation and a succession of elections which has often led to a situation of permanent electoral campaign. In 2019, again two general elections were held following the failure to form a government after the April elections. Seven months later, in November, Spanish voters were again summoned to the polls resulting in a win for PSOE, which eventually formed a coalition government with Unidas Podemos[1]. Besides, fragmentation in the Congress of Deputies increased with the arrival of VOX and a change in the political scenario with the massive loss of seats by political party Ciudadanos, which lost 47 seats in Parliament.

These facts explain the extensive exposure to political information on Spanish media. Prior studies have shown that in Spain there was a lack of interest in things political [17]. This trend, however, seems to have changed. In 2019, the interest in politics by Spanish citizens was 6.13 in a scale of 1 to 10, the most repeated value being 8[2].

48.3   Aims

Taking into account the exposed in the previous section, the main aim of this study is to know the frequency with which Spanish citizens consume political information through the media and whether this is associated in any way with their feelings towards politics. This will allow us to corroborate the hypothesis that a greater exposure to media information will contribute to generating positive feelings towards politics. Similarly, it will help us determine whether an information deficit is associated with negative feelings. As secondary aims, we will try to respond to the following questions: How often do Spanish citizen inform themselves on politics through traditional media (press, television and radio)? And on the Internet? Are the differences in feelings Spaniards have towards politics explained on the basis of whether they read print or digital press? Does the fact that the audience takes control of when, where and how to inform themselves reflect higher levels of positive feelings towards politics?

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[1] Again, an unprecedented event. The first coalition government in the democratic history of the country.

[2] Data from a post-electoral survey for the general elections of November 2019 conducted by the Political Research team of the USC [within the framework of the project *Consolidación y Estructuración* 2018 GRC (2018PG037) Ref. ED431C 2018/35, of the *Xunta de Galicia*], and which had the contribution of the University of Granada.

48.4   Methodology

In order to meet the objective and the questions posed, we opted for focusing on the case of Spain as justified above. The data used were collected from a post-electoral survey following the general elections of November 2019 conducted by the Political Research Team of the USC between 14 January and 22 February 2020. For this survey, we had the collaboration of the Computer-Assisted Telephone Interviewing laboratory of the University of Granada, which made the fieldwork. The study population was made up of Spanish citizens aged 18 or over and the sample size is 1000 interviews, under the least favourable scenario of $p = q$ and an associated error of $\pm 3.1\%$ and proportional allocation (according to sex, age and province).

The main variables used include the frequency with which political information is followed through traditional media (press, television and radio) and on the Internet; a battery of seven feelings towards politics; what TV channels, radio stations and newspapers the respondents use to inform themselves about politics and whether they prefer to print media, digital media or both for political news. All of them are nominal variables except feelings, which were measured on a 0 to 10 scale, where the score indicates the degree in which politics inspires the feelings listed. On the other hand, the nominal variable "how often do you use X media" was treated as an ordinal. We will provide the frequency tables, correlations using the Spearman's correlation coefficient and mean comparison analysis with ANOVA.

48.5   Results

We will begin by noticing that there are basically two media that Spanish people choose to inform themselves about politics: television and the Internet. Indeed, 59% of respondents say that they inform themselves daily or almost daily on television, and closely behind, some 53% of respondents do so online. The data from Table 48.1 show that the Internet is gaining momentum, displacing other media like newspapers or, to a greater extent, the radio. In fact, some 40% of the population claim that

Table 48.1 Frequency with which political information is followed in the media and the internet

Frequency	Press (newspapers and digital) (%)	TV (%)	Radio (%)	Internet (%)
Daily or almost daily	49.5	59.0	32.4	53.0
4 or 5 days a week	5.8	8.2	5.4	5.7
2 or 3 days a week	5.4	6.4	3.4	3.5
Only weekends	1.5	0.3	0.4	0.2
Occasionally	12.1	10.7	9.0	9.3

Source Own elaboration

Table 48.2 Degree of the feelings towards politics

Feeling	Mean (1–10)
Commitment	4.83
Enthusiasm	3.86
Interest	6.07
Indifference	3.27
Boredom	5.71
Distrust	6.52
Annoyance	5.77

Source Own elaboration

they never or hardly ever use the radio to inform themselves about politics. Similarly, the number of people who never read newspapers to inform themselves about politics (25.6%) is greater than those who never use the Internet (23.8%) to inform themselves. Consequently, it could be said that most people do receive political information via any channel at least occasionally.

On the other hand, the feelings towards politics that we have established consist of seven categories, where we can differentiate between those with a positive emotional load and those with a negative load[3]. As shown in Table 48.2, distrust is the feeling most strongly aroused by politics among Spanish population (6.52). Oddly enough, this feeling is followed by interest (6.07) and annoyance (5.77). There is, therefore, a mixture of feelings that ranges from those with very negative affective loads—like annoyance—to interest, which indicates a high degree of affinity and involvement in political matters. Consequently, we may predict that the level of exposure and the frequency with which people receive political information may be considerable.

Therefore, the question would be whether there is any type of association between how often people inform themselves about politics through each mass medium and their feelings towards politics. The purpose is to corroborate whether an information deficit may generate negative feelings which, subsequently, may turn into disaffection attitudes or behaviours, for instance.

To that end, we will begin by looking at the data for newspapers, which are shown in Table 48.3. First, we see that there is a statistically significant correlation with all the feelings towards politics except for the two at the opposite ends of the spectrum: annoyance—the most emotionally negative—and commitment—the most emotionally positive. Secondly, we see that the positive feelings that are significant (enthusiasm and interest) correlate with a higher following of political news. Similarly, for feelings of indifference—boredom and distrust—with a negative emotional load—the sign of coefficient is negative. We see therefore that a newspaper-related information deficit correlates with having negative feelings towards politics.

[3]In this regard, prior studies like the one by Vilas Nogueira [13] indicate that this battery of feelings can be arranged and processed originally from the one carrying the highest positive emotional load (commitment) to the one carrying the highest negative emotional load (annoyance). In fact, this scale of feelings has worked even in the case of studies looking at voting reasons that have applied that arrangement [18].

Table 48.3 Correlation between feelings and how often political information is followed in newspapers

Feelings towards politics	Spearman's coefficient	Sig. (bilateral)	N
Commitment	0.037	−0.318	713
Enthusiasm	0.110**	0.003	714
Interest	0.235**	0.000	715
Indifference	−0.205	0.000	716
Boredom	−0.155***	0.000	715
Distrust	−0.110**	0.003	714
Annoyance	−0.053	−158	714

**Correlation is significant at the level 0.01
Source Own elaboration

Table 48.4 Correlation between feelings and how often political information is followed in TV

Feelings towards politics	Spearman's coefficient	Sig. (bilateral)	N
Commitment	0.149**	0.000	936
Enthusiasm	0.213**	0.000	938
Interest	0.260**	0.000	938
Indifference	−0.160**	0.000	940
Boredom	−0.158**	0.000	939
Distrust	−0.146**	0.000	939
Annoyance	−0.015	0.647	938

**Correlation is significant at the level 0.01
Source Own elaboration

As far as television is concerned, in the data in Table 48.4, we see that the feelings towards politics in this seven-item battery have a statistically significant correlation with how often politics is followed on television—with the exception of annoyance. We see again the same pattern repeating. We find a correlation with a positive sign between how often political information is followed on television and the feelings of commitment, enthusiasm and interest. By contrast, data show that in the correlation with those feelings that carry a negative affective load, the opposite is true. Therefore, following political information on television—being informed through this medium—will increase the positive feelings towards politics.

We move on to look at the third traditional mass medium under discussion, i.e. the radio. As we have noted before, the percentage of people who use this medium to inform themselves about politics is lower than in the previous two media, but this does not mean that, again, the same trend is seen, as Table 48.5 shows. A greater frequency in listening to the radio to follow political information positively correlates with an increase in the degree with which positive feelings are felt (interest, enthusiasm, commitment). And the opposite effect occurs with negative loaded feelings.

Table 48.5 Correlation between feelings and how often political information is followed in radio

Feelings towards politics	Spearman's coefficient	Sig. (bilateral)	N
Commitment	0.134**	0.000	879
Enthusiasm	0.089**	0.008	881
Interest	0.178**	0.000	881
Indifference	−0.131**	0.000	883
Boredom	−0.068*	0.044	882
Distrust	−0.059	0.080	882
Annoyance	−0.042	0.210	881

**Correlation is significant at the level 0.01
Source Own elaboration

Therefore, an information deficit on politics on radio listeners also contributes to generating negative feelings.

Therefore, as far as traditional media are concerned, we can say that a deficit of political information through them will be associated with an increased degree of negative feelings towards politics. And a greater consumption will be associated with showing more favourable feelings towards politics.

On the other hand, it is well advised to review the role of the Internet. As noted above, the Internet and the online media provide an extensive source not just of information but of interaction and participation. In Table 48.6, we see that with the exception of annoyance, for all the other correlations statistical significance was found between feelings towards politics and how often information about politics was followed on the Internet. Like in the case of traditional media, the fact is repeated that a lower frequency in political information consumption on the Internet will correlate with a higher degree of negative feelings towards politics. By contrast, the opposite will happen with positive feelings.

This use of the Internet to obtain political information leads us to ask ourselves whether there is a gap between the feelings of those who read newspapers on paper

Table 48.6 Correlation between feelings and how often political information is followed on the Internet

Feelings towards politics	Spearman's coefficient	Sig. (bilateral)	N
Commitment	0.138**	0.000	922
Enthusiasm	0.167**	0.000	924
Interest	0.217**	0.000	924
Indifference	−0.110**	0.001	926
Boredom	−0.149**	0.000	925
Distrust	−0.078*	0.018	924
Annoyance	0.025	0.453	924

**Correlation is significant at the level 0.01
Source Own elaboration

and those who do so digitally or even those who read both formats. Consequently, we have made a mean comparison.

As a result of Table 48.7, we are going to focus on interest, enthusiasm and commitment. These three feelings fall under what we consider as having a positive emotional load and for which mean comparison analysis using ANOVA was significant. As far as interest is concerned, the variances analyses with robust contrasts reflect the mean differences (FW (2. 735) = 6.518 p-value < 0.005) for which Tahmane's Ta post host tests, equal variances not assumed, show the existence of significant differences between the individuals as those reading in the digital format tend to be more interested. Something similar happens with those exhibiting enthusiasm (F (2, 734) = 6.254 p-value < 0.005). In this case, post-hoc Sheffe's multiple comparison tests show differences between those reading print and digital media, showing greater enthusiasm in digital readers. As to commitment, again the variance analyses with robust contrasts showed a mean difference (FW (2. 733) = 5.693 p-value < 0.005) for which Tahmane's T2 post-hoc tests, equal variances not assumed, revealed significant differences between the degree of commitment with politics of those informing themselves using print media and those reading digital formats or both formats.

Table 48.7 Mean comparison for the degree of feelings towards politics on the basis of preference of print media, digital newspapers or both formats for political information

Feelings	Format	Mean	Standard deviation
Commitment	Print	4.55	3.27
	Digital	5.26	2.521
	Both	5.56	2.685
Enthusiasm	Print	3.53	2.704
	Digital	4.41	2.493
	Both	4.26	2.619
Interest	Print	5.93	2.881
	Digital	6.75	2.170
	Both	6.70	2.405
Indifference	Print	3.16	3.259
	Digital	2.82	2.690
	Both	2.70	2.675
Boredom	Print	5.64	3.150
	Digital	5.40	2.802
	Both	5.24	2.909
Distrust	Print	6.35	2.670
	Digital	6.37	2.463
	Both	6.22	2.464
Annoyance	Print	5.87	3.022
	Digital	5.71	2.816
	Both	5.94	2.900

Source Own elaboration

At the heart of the issue, what the data are revealing is that the Internet and the digital formats are a constant information medium where it is the audience who takes control of when they want to inform themselves to what extent, where, how, etc. Therefore, a higher degree of positive feelings towards politics such as interest, enthusiasm and commitment will be associated to those who now only inform themselves using the print media but who also inform themselves online as this format allows them greater coverage and therefore more information.

48.6   Conclusions

Undoubtedly, exposure to political information by Spanish population is high, much more so if we consider the context we have described, where political news dominates the news cycle. Television and the Internet are the main media used by citizens to receive political information. Other media like the radio, however, seem to be on the wane for this purpose as 40% of respondents report that they never or hardly ever use it for political information. These facts reflect that traditional mass media are opening to new formats such as the digital press or to following current political affairs on the Internet taking advantage of the multiple options it offers: newspapers, blogs or political parties websites, among others.

On the other hand, we have seen that distrust is the feeling that politics most strongly aroused among Spanish citizens. It is followed by others like interest, which denotes certain level of attention and involvement in political matters. In fact, indifference would be the one it is aroused to a lesser degree. Data described in previous section corroborate that politics as a generator of emotions and feelings that escape the logic of reason is a something to which the media contribute. In this regard, in the preceding pages, we have seen that one of the effects of the mass media has undoubtedly to contribute to generating feelings towards politics. Therefore, we have conducted a correlation analysis between the frequency with which citizens follows political information and the degree of their feelings towards it by looking at the cases of the three traditional mass media (radio, television and the newspapers) and the Internet. As a result, we have seen that for all four media studied whenever there is an information deficit the feelings aroused will have a greater negative load than when this lack of information does not happen. From the point of view of political science, this may have implications that could lead to disaffection behaviour or attitudes or it could result in a loss in interest in political matters.

Similarly, and taking into account, the potential advantages that informing oneself on the Internet has—as it is the audience who decides how, where, when and through which source—a comparison was made of the degree of the feelings of those who inform themselves using print media, digital media and both formats. The analysis of the comparison of means using ANOVA made it possible to determine that in the case of those who inform themselves digitally or using both formats, the degree of the positive feelings towards politics—which is where statistical significance was found—is greater than in the case of those who only read print media. This reflects

the effect that informing oneself on online has as it is the audience who takes control of where, how or when to do it. Besides, it corroborates the hypothesis that was already confirmed, whereby lack of political information contributes to generating negative feelings towards politics.

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Chapter 49
Social Forces as Political Actors in International Relations: A Review from the Critical Theory

Andrea Mila-Maldonado and **Erika Jaráiz**

Abstract The overall aim of this article is to review the concept of social forces as political actors in the international domain from the perspective of the critical theory of international relations. The method used is the bibliographic review where the scientific articles belonging to this domain are taken as its documentary corpus and Robert W. Cox's method of historical structures as its main axis. Cox's method identifies as levels or spheres of activity the *social forces*, the *forms of States* and *world order,* and as frameworks for action the combination of *ideas*, *material capacities* and *institutions.* As a result, it follows that social movements—understood as social forces—can be considered social and political actors participating in foreign action—whether under an institutionalized form or not. Social movements have an impact on the frameworks of action and are able to either contribute to the perpetuation of an existing historical structure or resist it. But by themselves, they are unable to bring about the social changes that Cox's approach proposes. Therefore, their relation with the State remains a basic element, at least for understanding the phenomena that take place in international relations. However, we should not ignore their role as new actors endowed with the responsibility of proposing the most significant transformations in the world concert and well as their impact in the decision-making process at a global level.

49.1 Introduction

The classical approaches to international relations (IR) have difficulties in explaining the phenomena that occur in the international system satisfactorily. This has led to the introduction of new paradigms and theories which adapt to the nature of current

A. Mila-Maldonado (✉) · E. Jaráiz
Universidade de Santiago de Compostela, A Coruña 15782, España
e-mail: andreadelcarmen.mila@usc.es

E. Jaráiz
e-mail: erika.jaraiz@usc.es

dynamics as well as to new actors, while acknowledging the historical role of the State as a pre-eminent aggregate of political power.

The School of Frankfurt takes conflict as a possibility of structural change and dialectic logic as its basis. The works of Max Adorno and Theodor Horkheimer—as members of its first generation—marked the transition to praxis: theory and practice/thought and action, in open opposition to the postulates of instrumental rationality of the traditional theory that adopted a role of contemplative inertia, the impossibility of substantial modifications in social research and its bias towards the status quo [1]. It is in this spirit that the Critical Theory of International Relations (CTIR), which is influenced by the studies by Horckheimer and Habermas, outlines forms of State in the light of the changes experienced by the social forces and how these changes, combined, are able to configure a world order at a given time.

As the rise of this theory took place in 1980, it was necessary to perform a historical tracking of the works of the earlier theoreticians Cox [2], Ashley [3], Linklater [4], Hoffman [5] and Neulfeld [6], some of them with the imprint of Gramsci and Habermas. The simultaneous rising and the strengthening of the social movements (SM) by late twentieth century and early twenty-first century led to divide the analysis into two domains: the first around CTIR and the second in regard to the SM as political actors with contributions from sociology that enable an interdisciplinary dialogue in keeping with current changes.

The relevance of the study proposed here lies in the fact that the greatest contributions to the critical perspective consist in including the social component as part of the analysis of IR as well as an agent of change that has an impact at the level of actors and include Marxism, free from dogmatism and acknowledging the ontological and normative challenge this entails [7]. In addition to this, there is a need to up-date international studies at the rhythm of the changes to the system.

Theory must be able to identify what it is useful for [8] and this is something that critics are very aware of: it may either contribute to preserving the existing world order and its inequalities or contribute to the change to a more equitable world order in the hope of giving rise to a transnational civil society, new forms of participation and social movements [9]. In the lines that follow, the main postulates of this proposal are discussed.

49.2 Methodology

The overall aim of this article is to review of the notion of social forces as political actors in the international arena and the research question is under which form can social forces have an impact on international politics? The starting point is a descriptive bibliographical review as a method aimed at updating concepts [10], in this case in the domain of International Relations.

The proposal systematizes, on the one hand, the corpus of analysis—conceived as an 'articulated arrangement of documents'[1] [11]—into 48 scientific articles for which a search was made using the browser Google Scholar. Of these, 26 were selected. The work of Robert W. Cox—as its leading exponent—is the starting point and the main axis of the article. The object of study, on the other hand, is social forces as political actors with agency in the international domain, materialized in the form of social movements. Thus, the search was made by cross-matching the following elements:

1. Thematic areas that are embedded into the object of study: *critical theory of international relations; social forces/social actors/social movements in international relations and social movements*;
2. Authors;
3. Study relevance.

49.3 Results and Discussion

49.3.1 International Relations and Critical Theory

Robert W. Cox is considered the most important critical author of IR with significant contributions in political economy. Under the method of historical structures, his postulates—included in his main work Social Forces, States and World Orders: Beyond International Relations Theory (1981)—depart from classical approaches when analysing the nature and action of the actors in the international area from a perspective that shows its Neo-Gramscian influence in four aspects: (a) it resumes ontological and epistemological elements of the world order chronologically; (b) it makes innovative contributions as far as concepts, theory and methodology are concerned; (c) it studies emerging world orders from a historical and multidimensional logic—taking into account its limits and especially its contradictions; (d) it considers the ethical and practical aspects that concern the global domain and conflicts inherent to it [12]. Additionally, his approach incorporates historical materialism as a source—thus clearly distancing itself from structural materialism—[13]; dialectics under the form of the dialectical competence model [14] and Gramsci's concept of hegemony[2] adapted to IR.

This Neo-Gramscian theory entails a critique of the existing theories—notably Waltz's neorealism and its connection to the problem-solving theory—and makes headway towards self-reflection and the questioning of the dynamics of power. Its

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[1]Free translation by the authors.

[2]Hegemony is understood as the predominance of material power of an economic, social and political structure; an order among states with a dominant mode of production that connects the social classes of the different countries. Arrighi contributes the concept of 'world hegemony' also from the Gramscian current—which transcends domination and is linked to global leadership in a state under two forms: emulation and consensus [15].

argument is based on the fact that the interactions that are generated between the State and the civil society must not be ignored as the currents that distinguish them have been superseded, which again shows its Marxist imprint in regard to the similarity in the State-civil society relation with that of Gramsci's structure-superstructure.

It is at this critical turning point that we find the works of Richard Ashley, Andrew Linklater, Mark Hoffman and Mark Neufeld, for whom theory is itself is the consequence of a dialectic relation with the hegemonic currents, for which reason, its essence is eminently emancipatory and dissenting as it considers the emergence of an alternative world order a possibility [5]. Their contributions are summarized in Table 49.1.

A final element that should be underscored is the vision the critics have of the conflict. Contrary to what realists hold, conflict is not observed as an element inherent to the social relations and the relations among States but as the seed for historical change that brings about the origin of alternative forms which are the result of the clashing of opposing social forces at a given time and under the principle of contradiction (dialectic logic).

Table 49.1 Authors of the critical theory of international relations

Author	Work	CTIR Approach
Robert W. Cox	*Social Forces, States and World Orders: Beyond International Relations Theory* (1981)	Method of historical structures Dialectic logic Historical materialism Hegemony and counter-hegemony in IR Historical change [2]
Richard Ashley	*Political Realism and Human Interest's* (1984)	Critique of neorealism (Waltz) Recovers aspects of classical realism Self-reflection Alternative method: dialectic logic [3]
Andrew Linklater	*Men and Citizens in the Theory of International Relations* (1982)	Open dialogue Disagreement with positivism Transformation/change in structures Historical sociology with an emancipatory purpose [4]
Mark Hoffman	*Critical Theory and the Inter-Paradigm Debate* (1987)	Dialectic logic as the origin of CTIR Transformation/ change in the system Self-reflection Historical and normative component Recovers the system—world approach [5]
Mark Neufeld	*The Restructuring of International Relations* (1995)	Self-reflection Normative components CT as social justice and universal moral [6]

49.3.2 Social Forces from a Critical Approach

The *social forces*, the *forms of the State* and the *world orders* are the three levels or *spheres of activity* where historical change is generated. Their mutual interrelation is assumed as the transformations that are generated at the level of *social forces* are able to affect the configuration of States, a situation that impacts on the very world order. There is not among them a fixed sequence, hierarchy or linearity as they are constantly containing or repelling the impact of the others [8].

Cox does not speak of the State as an indivisible unity. Instead, he speaks of multiple *forms of States* that are configured by an inter-penetrated relation with civil society. This State-civil society interlocking is the basic entity of international relations [8]. A similar situation results from the transition from the *top-down* approach [16] to the *bottom-up* [17] perspective of the studies that address political science in the domain of public policies as while the former does not take into account the 'contributions resulting from social and political processes'[3] [18], the latter acknowledges social actors and the tensions they generate.

The *social forces* originate in the production processes and have an innovative role and incidence on international relations, particularly, at those stages when significant historical changes are generated. This highlights the socio-centric approach in international processes as the most relevant contribution of critics as attention is no longer focused on the State, but it is shared with the *social forces,* which are understood and interpreted as the centre of the analysis depending on the case under study.

The international as well as domestic nature of the *social forces* makes it difficult for researchers to place them in a specific physical and temporal space as they go beyond the limits of State borders. This entails giving them a transnational nature where the State becomes a transmission belt—without losing autonomy—between local *social forces* and international *social forces*, which makes the world into its template and its space of interaction [8].

Under the Coxian perspective, *social forces* are defined from the concept of *frameworks of action* which are responsible for shaping the *historical structures* and describe a specific combination of ways of thinking, material potentialities and institutions at a given historical moment. These aspects are in line with one another and condition historical change provided there is no hegemony of a rival historical structure able to displace the existing historical structure [14]. This concept is connected to Gramsci's *blocco storico*, whose *sine qua non* condition is that there is a link or connection between the structure (economic element) and the superstructure (ideology) [12]. From the *frameworks of action,* three key concepts of Robert W. Cox's proposal are derived, namely the *ideas,* which are interpreted as shared perceptions, values or beliefs that perpetuate the historical structure; the *material capacities*—understood as capabilities and resources that are both constructive and destructive—and the *institutions*, which reflect the power relations that have a bearing on the configuration of the ideas and the material capacities. The combination of these three elements outlines the dynamics and the limits within which the *social forces*,

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[3]Free translation by the authors.
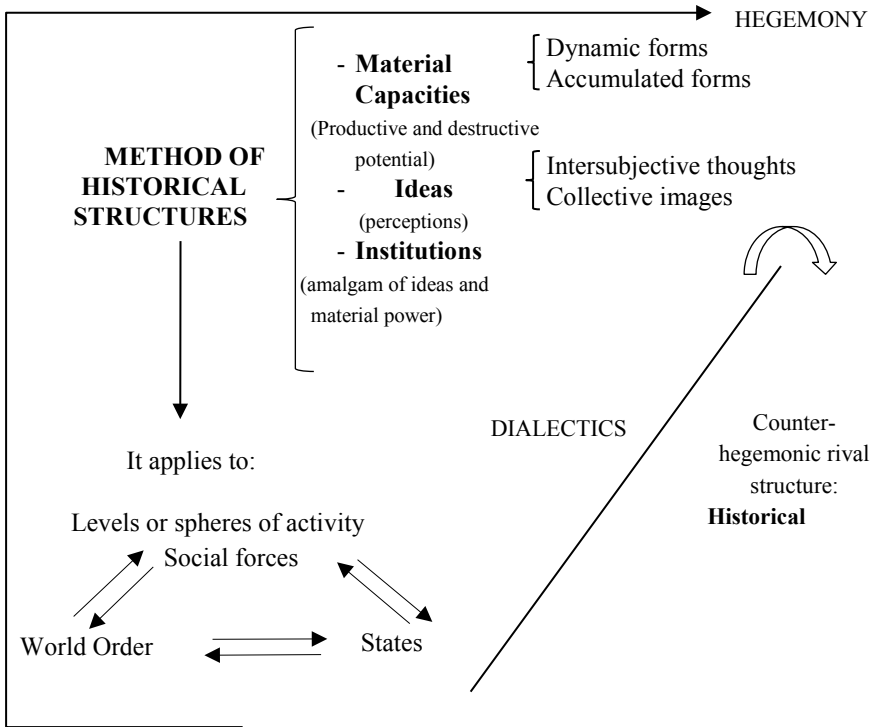
Fig. 1. Method of historical structures according to Robert W. Cox. Own preparation and [2]

the *States* and the *world order* must operate [2, 8, 13]. An outline of Robert W. Cox's proposal is shown in Fig. 49.1

49.3.3   Social Forces: Political Actors in International Praxis

Empirically, the local and international *social forces* described by Cox take multiple forms, one of the most representative being social movements (SM) as they comprise: (a) collective action that is channelled through their struggles, vindications and inter-subjective interpretations of reality; (b) capacity of agency with the positioning of themes of a political, economic, social and environmental nature, among others; (c) infiltration into State legislations by the governments that include their proposals within the national legal edifice (for instance, the constitutions of Ecuador, Bolivia and Venezuela); (d) alternative, meaning-creating discourses that are part of central notions in the guidelines of international organizations, which sometimes have been generated as a result of their absorption by the latter and; (e) interlocking with supranational bodies as part of their internal structures.

A social movement is a social and political conglomerate that has three basis characteristics: a 'political agenda', a 'collective action' and the 'search for identity recognition' [19]; additionally, its origin manifests opposition to an adversary [20] which might be a social, economic or political model, an entity or individual. Its internal organization structure is horizontal, with non-predefined roles among its members. In this sense, and taking Cox's notion of conflict, they are agents able to generate or hinder change through collective actions—whether formal or informal[4]— because although most of them originate as resistance to the established order, others tend to legitimize it, as it was the case of the social bases of Pinochetism or the 'urban mobs' of several preindustrial cities [21].

In IR, SM are conceived under two forms of involvement: as *new actors of the world system* and as *social actors with participation in foreign action* [22]. The sociological approaches identify them as informal collective action institutions, a typology which, although it is not used by authors in international relations, summarises its conceptual and organic basis [23], which at least in its symbolic dimension it may prove useful.

As *new actors of the international system* 'the study remains still too much rooted in classical views, hampering the addition of new forces which, however, in practice have been proving its capacity to act in the international arena'[5] which remains to be a difficulty encountered by the theories at the level of actualization of the actors [22]. On the other hand, under the mode of *social actors with participation in foreign action* two avenues are available: (a) the non-institutionalized one—'by irruption'—with its innovative intervention channels like the holding of counter-world summits, mobilizations, forums, meetings and conferences (for instance, those organized by anti-and alter-globalization movements, indigenous groups, ecologists, feminists, among others)[6] and; (b) the institutionalized one—or 'by invitation'— which includes the creation of *ad hoc* entities inside multilateral organizations or regional or cooperation integration schemes to include them into the organizations (some instances of this are the CONCORD, EESC of the European Union [22, 24] and the Council of Social Movements of the ALBA-TCP in Latin America).

While the first mode is the most common among SM, the second has a basic problem that is intertwined with the debate of the transition from the *top-down* approach and the *bottom-up* perspective, because as they are part of supranational institutions, the logics of bottom-up citizen participation that tend to operate outside

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[4]Informal collective action has three variations or forms: 'collective mass action, (general) social movements and specific movements (or monographic or issue movements)' and it is different from formal action in that the latter has broader objectives, high levels of organization or cohesion and is geared towards obtaining political-administrative power, such as, for instance, the political parties [21].

[5]Free translation by the authors.

[6]Some specific instances are: the uprising of the Zapatista National Liberation Army (EZLN) in January 1994 against the North American Free Trade Agreement or the 1st Intercontinental Gathering for Humanity and Against Neoliberalism, which was an anti-neoliberal event held in Mexico on 27 August 1996.

institutional spaces are deactivated and their discourses and actions are constrained by the very fact of being within the institutions.

Salvador Aguilar [21] systematizes and categorizes four main waves of social movements: (1) *Primitive movements* from the premodern era to the industrial one. (2) *Classical movements* from the eighteenth century to the first third of the twentieth century; (3) *new social movements* which emerged between 1960 and 1990; (4). *Newest social movements* which took place in the decade of 1990; and (5) *Anti-systemic peripherical movements* of the last third of the twentieth century, which began in peripherical or semi-peripherical countries but were echoed globally. For our purposes, the last three are taken as reference as well as their typical illustrative cases, namely the pacifist, the ecologist, the feminist and the sexual liberation movements (Type 3); anti-systemic movements (Type 4); the Zapatista movement and the Landless Workers' Movement (Type 5).

Some demonstrations such as those in Seattle in 1999 against the World Commerce Organization that were spearheaded by the anti-globalization movement did not originate in the periphery. Consequently, they cannot be included in the latter group with which they coincide in time, but it is important to acknowledge them as they are part of the centre and their collective action and social fabric operate in the transnational domain. However, the specific movements of global resistance 'have hardly had access to political, partisan or economic elites and have usually been branded as marginal by the latter'[7] but their success has been marked by 'the ability to introduce certain themes and perceptions in the beliefs that already existed in the population'[8] [25].

A feature shared all the initiatives of these SM, especially in the case of Latin America, is the blurring of national borders to the point of generating global networks with worldwide media coverage and reach as well as other consequences worth mentioning. The first is that several of their claims and demands were added to the political agendas of governments, one example of this is the configuration of the map of Latin America at the beginning of the twenty-first century, the seed for left and centre-left political parties which assimilated several of their ideas and were later institutionalized in their government plans and institutions once they reached power through elections. The second is that the *top-down* and *bottom-up* logics ended up sharing a common ground on a specific issue, namely the rejection of neoliberal postulates—a scenario that contributed to the access to power of indigenous leaders like Evo Morales or openly left leaders like Pepe Mujica, Rafael Correa, Nestor Kirchner, Lula Da Silva and Hugo Chávez. All of them were backed by domestic and international *social forces* as well as by high levels of popular support and acceptance as shown in the votes of citizens, thus, configurating the form of various Latin American States under the aegis of the twenty-first-century socialism.

Within the framework of local political systems, SM generate actions that tend to be in keeping with or clash with government agendas and their interlocution with the political elite will be more or less conflictive on the basis of the ideals they

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[7] Free translation by the authors.

[8] *Ídem.*

defend, in the same manner, as their existence will be acknowledged to a greater or lesser extent for the same reason. Therefore, when faced with the question of how citizens can have an impact on international politics, these 'collective political actors' [25] are one of the answers as they express a pre-existing conflict while, at the same time, they echo the dissatisfactions that have not been addressed by those legitimately responsible to do so a situation that puts particular tension on the State as they permeate the decision spaces that previously had been exclusive to it [25], including foreign action [26].

49.4   Conclusions

By way of conclusions, it may be said that the analysis of themes made can be synthesized in three groups of ideas.

The first group underscores the social component that the critical theory provides as it disrupts the bases of the hegemonic postulates that do not place the individual within the analysis of IR. Latin American peripheral countries are some of the most significant cases that might demonstrate features of State-civil society and State-*social forces* interlocution where the latter play an important role in the internal dynamics and legislative initiatives, in the *issues* of the foreign policy agendas and in the boosting of new integration mechanism that characterize the social aspect. Other studies show the influence of these actors with initiatives that are included in the institutionalized form or by invitation within the international organizations of the centre of power.

The second conclusion has to do with how *social forces* reveal themselves as actors of the international system and this is achieved through the SM, whose collective action and construction of meanings—ideas—has permeated the global political, economic and environmental agenda with demands that synthetize the problems of the world order from a bottom-up approach where the State acts as a hinge between the local and international *social forces* while they struggle for some spaces that were historically the sole domain the state such as for instance decision making and foreign policy, which increasingly involve coalitions of actors. Despite the fact that foreign policy continues to be represented by the government from the logic of a bureaucratic-rational administration, the discourses, the development plans and the public policies include broader sectors of society, reflect several of the demands of these groups and the channels more frequently used so that citizens may manifest their views on political decisions are associated to the SM.

The third conclusion attributes importance to the political action that these *social forces* perform. Although they are not able to generate the social change as envisaged in Cox's proposal or create rival historical hegemonic structures (largely because of the difficulty of identifying the quality and quantity of the change SM are able to generate), they play a role as they are responsible for proposing the most significant transformation of the international system. They also reveal the democratic

deficits and place counter-hegemonic discourses within world organizations through articulations with political and media leaders or through action on the streets.

Finally, there is an academic vacuum at the level of actors that continues of obviate the *social forces*. Consequently, the forms in which individuals express themselves in the international arena and their impact remains a subject to be strengthened in IR.

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Part XII
Virtual and Augmented Reality in Marketing

Chapter 50
Estimation and Trends of the Absorption Refrigeration Global Market

Andrés David Rodríguez Toscano, Diego Alfonso Arias Torres,
Doyreg Maldonado Pérez, Aurora Patricia Piñeres Castillo,
Julio César Mojica Herazo, and Moisés Hinojosa Rivera

Abstract This study presents the evolution and economic development of the global market for absorption refrigeration systems. The article reviews trends in demand for high and low-power absorption refrigeration systems. High growth potential was found in low-power absorption refrigeration systems in the global market. An important finding is that the most widely installed systems in the world are those of single effect and double effect, due to their cost/benefit ratio. It also reviews the relations and trends of companies that manufacture this technology.

50.1 Introduction

In order to reduce energy consumption, standards and policies have been developed that enable the definition of scenarios that are suitable for improving energy efficiency in different economic sectors [1, 2]. Currently, the issue of the increase in electric power consumption by refrigeration and air conditioning systems has sparked substantial interest in the scientific community [3–5]. The 40% of the electricity generated globally is destined to buildings and of this, and 50% is used for cooling and/or air conditioning [3]. In the context of global warming and technological development, it is forecast that electric power consumption by buildings will grow

A. D. R. Toscano (✉) · D. A. A. Torres
Energy Department, Universidad De La Costa, Atlántico, Colombia
e-mail: arodrigu83@cuc.edu.co

D. A. A. Torres
e-mail: darias8@cuc.edu.co

D. M. Pérez · A. P. P. Castillo · J. C. M. Herazo
Productivity and Innovation Department, Universidad De La Costa, Atlántico, Colombia
e-mail: jmojica5@cuc.edu.co

M. H. Rivera
Faculty of Mechanical and Electrical Engineering, Universidad Autónoma de Nuevo León (UANL), Monterrey, Mexico
e-mail: moises.hinojosar@uanl.mx

to 50% of electric power generation, due to more extensive use of air conditioning and refrigeration systems [3].

The most used refrigeration systems are compression refrigeration systems [4, 6, 7]. They consume a large amount of energy and require electric power for their operation [4]. This electric power is usually produced from the combustion of fossil fuels, which generate greenhouse gases. Absorption refrigeration systems represent an alternative for reducing electric power consumption for refrigeration [8, 9]. Though these systems are robust and have been in the market for a long time, their performance has improved thanks to technical developments [8]. This technology does not differ substantially from the compression systems, but they use an absorption system rather than a compressor, which significantly reduces electric power consumption [10]. However, the technology is considered non-conventional and its market penetration is low compared to compression systems. Absorption system manufacturers and researchers have developed joint strategies and efforts to promote this technology and increase their thermal performance and economic viability, but in many countries, the market remains unaware of these trends [11]. There are certain social barriers that prevent its development, and in many cases, only private market documentation is available [11–13]. Over the last two decades, there have been significant developments in this technology, as well as growth trends, but they have not been widely publicized and there has been very little information analysis [11, 13, 14]. This study aims to review the state of commercialization of the absorption system, and technical aspects at present worldwide.

50.2   Methodology

The analysis of the market for absorption chillers was performed using Pareto charts, scatter plots, correlations in the specialized literature and search trends in Google over the last 5 years. For the analysis of volumes and the number of absorption refrigeration system installations cited in the scientific databases, the VOSviewer software was used. This analysis is based on the number of hits of all the keywords in the specialized literature. The databases used for the analysis were: SCOPUS, PATEBASE and INTERNET. This document analyzes the interest in searching for absorption chillers and absorption refrigeration with economic data and actual data on installation of absorption chillers in different industries, sales and marketing trends, technical and economic aspects of the market.

50.3   Results and Discussion

50.3.1   Global Trends in Searches and Installations of Absorption Refrigeration Systems in Internet and Scientific Databases

Figures 50.1 and 50.2 display the global percentage of interest in absorption refrigeration and in absorption chillers over the last 5 years. The slope of the trend lines of both figures is negative, indicating a reduction in the number of searches in recent years. In general, they display a significant decline in searches or global interest in the technology in the Internet, and a further decline is expected in the future.

The documents on applications and innovations related to absorption refrigeration systems in the scientific environment, by year from January 2015 to December 2019, displays an increase (2015–201, 2016–214, 2017–230, 2018–260, 2019–300 documents) The searches of the topic of absorption refrigeration may be related to research and new market trends; however, the correlation does not indicate causality, and consequently, more information would be required to reach such a conclusion. On the other hand, the absorption chiller topic appears to be strongly related to searches for specific types of chillers, either for acquisition purposes or to compare specific equipment characteristics. Regarding the general topic of absorption refrigeration, the countries that display greatest interest are: (1) India, (2) USA, (3) Pakistan, (4) Thailand, (5) Canada. The countries with the highest number of searches for absorption chillers are: (1) Pakistan, (2) Thailand, (3) Canada, (4) Australia, (5) USA. Many
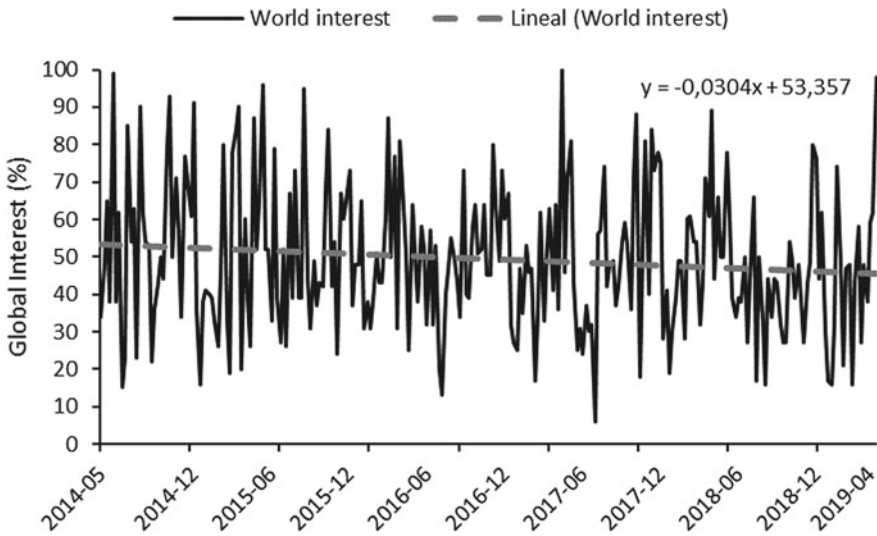
Fig. 50.1 Global interest in "absorption refrigeration"
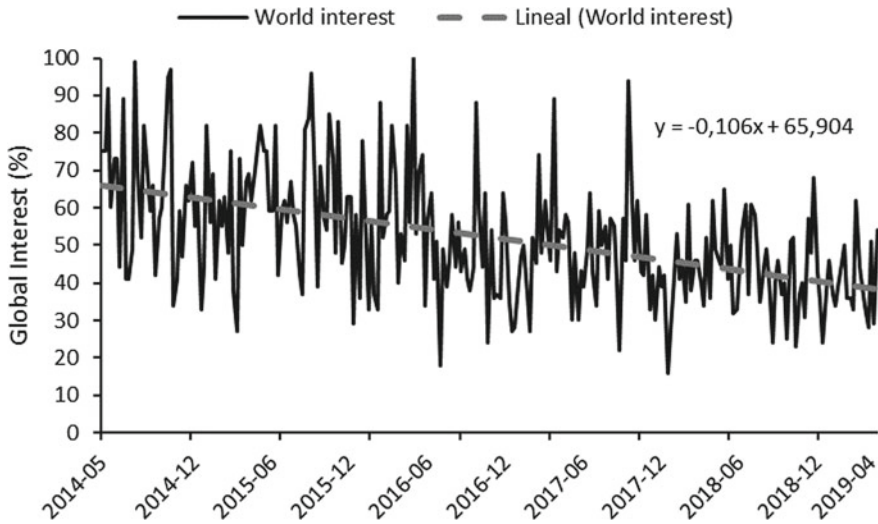
Fig. 50.2 Global interest in "absorption chiller"

of the countries that display greatest interest in absorption refrigeration are the same
ones that display greatest interest in absorption chillers.

This indicates that countries with specific interests in the commercialization of
this technology also have a high level of interest in research on topics related to
refrigeration.

It is noteworthy that North America, parts of Asia and Oceania have displayed
ongoing interest in absorption refrigeration and absorption chillers in recent years.
Figure 50.3 displays the level of relationship and occurrence of installation of absorp-
tion systems in the specialized literature. Both the thickness and color of the line indi-
cate the level of relationship (blue: low, green: medium, red: strong). It indicates that
the index of installation of absorption systems reported in the specialized literature
has a medium co-occurrence level, i.e., a medium level of relationship. Figure 50.4
displays the overlay visualization of the relationship of absorption systems and the
number of installations per year. It indicates an increase in installations of absorption
systems, at a quicker pace in recent years. This has been possible due to a reduction
in market gaps, technology developments and changes, and the increase in associated
research.

Fig. 50.3 Level of relationship and occurrence of installation of absorption systems in the literature

Fig. 50.4 Relationship between absorption systems and installations per year

50.3.2 Analysis of the Behavior of Absorption Chiller Manufacturers in the Market (Technical and Market Aspects)

Many absorption chiller manufacturing companies offer products in different power ranges; however, the offerings of this technology are concentrated in high refrigeration demand. Figure 50.5 displays several absorption chiller manufacturers and the refrigeration power ranges reported in the specialized literature [15, 16].

SHUANGLIANG, WORD ENERGY and THERMAX are the companies with the widest range of coverage, given that they account for 20% of the absorption chiller companies, and their offerings cover 80% of the range of refrigeration power offered in the market; they also offer a wider variety of absorption chiller refrigeration capacities, which has been favorable for increased demand in the non-industrial segment, which has been valued at US $ 197.3 Mio. [11, 13].

Figure 50.6 displays installed absorption chillers classified by power in different sectors [15, 16]. Of total installed absorption chillers, 80% are in the refrigeration
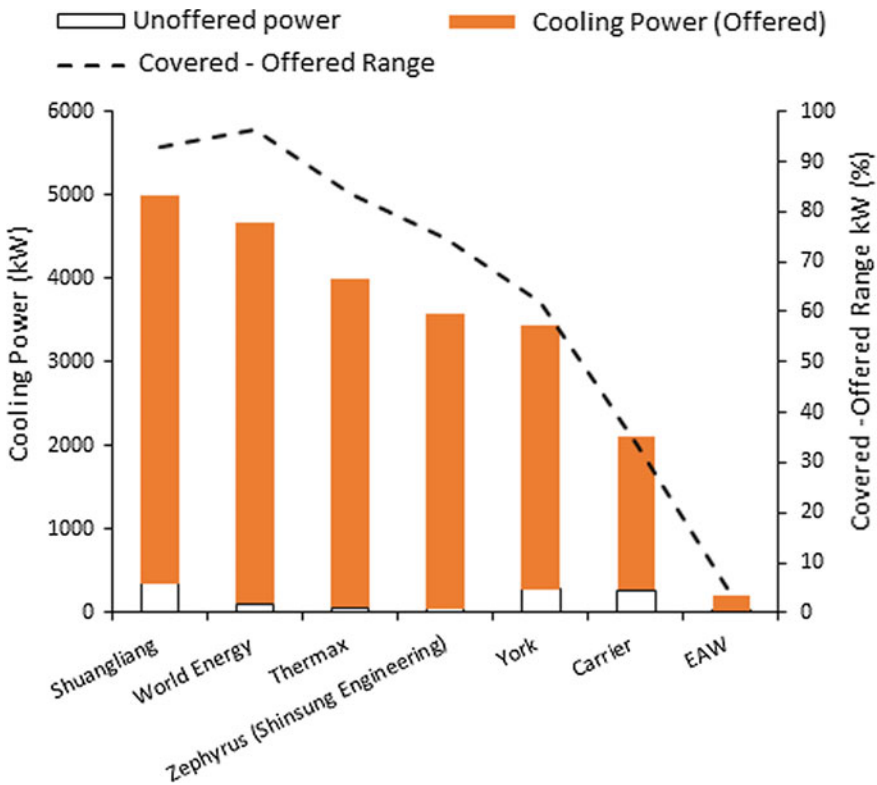
Fig. 50.5 Absorption chiller manufacturers, refrigeration power, range covered by offerings in kW
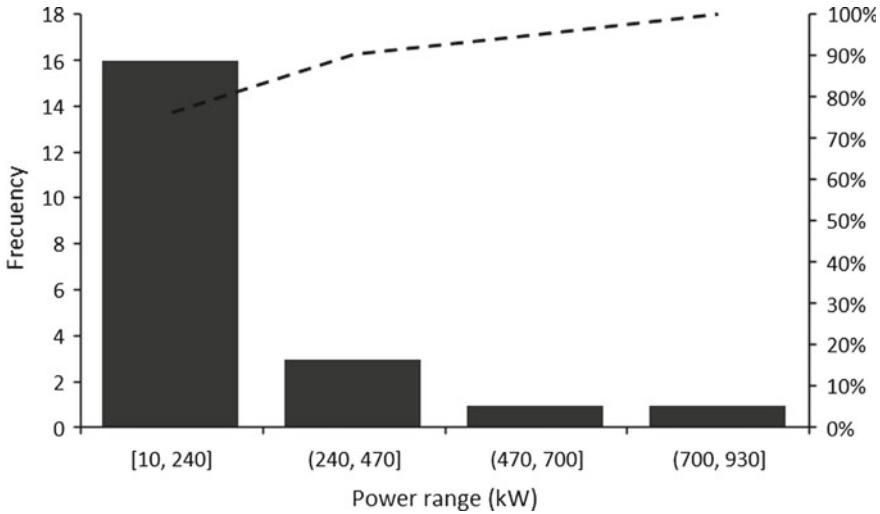
Fig. 50.6 Number of installed absorption chillers by refrigeration power range (the axis on the right is frequency accumulated in percentage)

power range of 20–240 kW, which account for 20% of offerings. This indicates that increasing coverage and developing manufacturing of low-power absorption chillers could potentially increase the number of installations. The literature display, the number of recent installations of absorption chillers by type of effect or stage, at the global level [7, 15, 17] (relevant installations were included from studies that carried out projects with high-impacting installations). It indicates that the absorption chillers with most penetration are those of double effect, followed by those of single effect; no other types are displayed because there were no reports on their installation. This indicates that intensified efforts to develop double effect absorption preference for this type.

50.3.3 Current Status and Market Prospects for Absorption Chillers

According to the International Energy Agency, of the 552 installed solar refrigeration systems worldwide, 82% are absorption systems, 11% are adsorption systems and 7% are desiccant systems [8]. This implies that absorption systems have a high level of penetration in the global non-conventional refrigeration market. The market for absorption chillers is currently valued at US$ 6.2 billion, and it is forecast to increase up to US$ 9.2 billion by 2026, equivalent to a compound annual growth rate (CAGR) of 5.06% [11]. North America accounted for close to 19.19% of the global market, and it is expected to grow at a CAGR of 5.88% in upcoming years. This forecast

was made taking into consideration the incorporation of this technology in the food products and oil and gas industries, and the implementation of low-power absorption refrigeration systems in the non-industrial sector [11]. The introduction of these technologies at these scales with solar collectors produces a diversification in the cost distribution of projects. In general, in absorption system facilities that produce refrigeration of around 15 kW, 19% of the costs are spent on acquiring solar collectors, and 33% on the absorption machine; however, in facilities with greater refrigeration capacity, the absorption machines only account for 17% of total costs, while solar collectors account for 47% [18]. Sales revenues in China and India are expected to post-CAGR of approximately 7.2% in upcoming years. Europe's absorption chiller market has displayed substantial growth in recent years, followed by North America, and is expected to have the fastest CAGR from 2016 to 2022. This growth is driven by growth in the business and construction sectors, due to their respective heating and/or refrigeration requirements [18, 19].

50.3.4 Opportunities and Characteristics of the Absorption Chillers

In general, absorption refrigeration systems can be powered by any heat source capable of reaching a temperature of 80 °C or higher [4, 15, 20]. This means that energy sources such as solar radiation, steam, natural gas and exhaust gases are potential power sources [10, 16, 21]. This may, in turn, improve the efficiency of equipment or systems already in operation and/or the use of solar energy, which is available at no cost from the sun. Numerous studies discuss applications of absorption refrigeration systems in different sectors [22, 23]. The diversification of offerings and technical developments has improved this technology's thermal performance [16]. However, as in every technology, there are certain fields that are more suitable for application.

Figure 50.7 displays the number of families of patents by their respective fields of action, based on a search in PateBase. It indicates that this technology has a.

greater scope of influence in thermal processes and in devices than in other fields, which suggests that this technology has greater commercial acceptance in this field at the functional level.

The dissemination of application of this technology has sparked the interest of companies in using and researching it in recent years. Both developed and developing countries have implemented these systems to a large extent and have developed policies that promote their use [1, 23, 24]. However, unawareness and lack of training at the industrial level have created social barriers [1, 12, 18]. Figure 50.8 displays the development of inventions and their relationship with applicability and improvements to inventions related to absorption refrigeration systems. Also highlights a high participation by countries such as USA, China and Japan, based on a search in PateBase. Their policies and regulations have promoted their development. This

Fig. 50.7 Number of families of patents by field of action, based on a search in PateBase
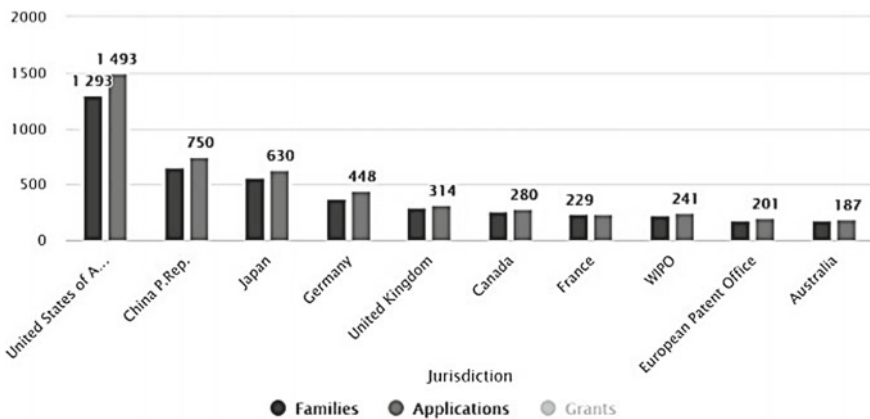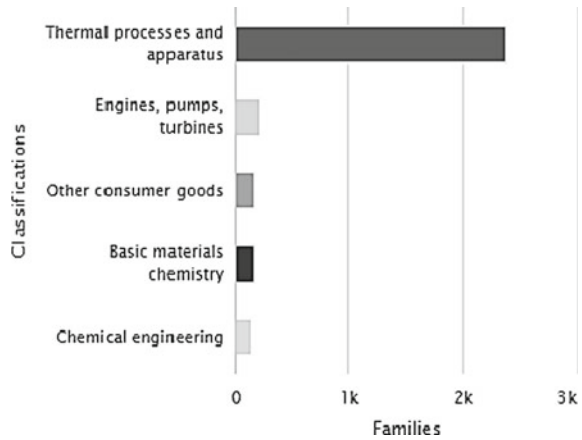
Fig. 50.8 Families and applications of absorption refrigeration patents at the global level

technology may have good acceptance in countries with some of the following characteristics: Government policies that promote incentives for use of the technology, mandatory energy efficiency targets in the industrial sector, low cost of natural gas, high demand for refrigeration, high solar radiation and high potential for recovering residual heat [8].

Table 50.1 displays the expected evolution of refrigeration costs for technologies that involve the use of solar thermal energy.

It indicates a reduction of up to 69% for upcoming years, which will further enhance the development and immersion of absorption systems with solar collectors.

Highlight that of the 552 solar refrigeration system installations recorded by the International Energy Agency, the absorption systems offered by CLIMATEWELL and ROTARTICA accounted for 34% and 23% of total installations, respectively [8, 18]. These are manufacturers of small-scale solar refrigeration systems. If demand

Table 50.1 Evolution of refrigeration production costs using solar thermal systems [18]

Size of facility	Average production cost (c€2010/kWh)		
	2012	2020	2030
10 kW	17.5–18.6	14.3–15.1	11.5–12.1
300 kW	12.7–14.7	10.4–11.8	8.3–9.4

spurs the market, new manufacturers focusing on small-scale systems may appear. However, the immersion of these technologies also implies the development and growth of other companies that hold the rights to inventions and/or to royalties for the use of such technologies (as in the case of Carrier Corp., Electrolux and Servel Inc.)

50.4 Conclusions

The following are the conclusions of this study: (1) There is a global trend toward a lower level of interest in searches for absorption chillers and the topic of absorption refrigeration. (2) The countries that display most interest in absorption chillers and absorption refrigeration are: (a) Pakistan, (b) India, (c) USA. (3) Despite the lower level of interest and a probable future drop in searches, an increase in sales is forecast due to strategies to increase the power ranges of absorption chillers. (4) The greatest number of installations of absorption chillers is in the power range of between 10 and 240 kW. (5) The greatest number of installed absorption chillers is of the double effect type. (6) The countries that have developed greatest interest in searches for absorption chillers and absorption refrigeration have forecast significant sales growth.

Declaration of Competing Interest The authors declare no conflicts of interest.

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Chapter 51
The Impact of YouTubers' Credibility and Congruence in Consumers' Attitude Towards the Brand

Maria I. B. Ribeiro ⓘ**, António J. G. Fernandes** ⓘ**, and Isabel M. Lopes** ⓘ

Abstract The aim of this study was to measure the impact of YouTubers' credibility and congruence in consumers' attitude towards the brand. The population of the study involved students enrolled in Portuguese higher education in 2019. Among a total of 385,247 students, a non-probabilistic sample for convenience of 1,642 was selected. The results showed that the congruence of the YouTuber with the brand ($t = 17.253$; p-value $= 0.000$), the congruence of the YouTuber with the consumer ($t = 4.521$; p-value $= 0.000$) and the YouTuber credibility ($t = 4.550$; p-value $= 0.000$) are predictors of consumers' attitude towards the brand. Moreover, the congruence of the YouTuber with the brand has shown to be a good predictor of consumers' attitude towards the brand and an even better predictor when compared to the congruence of the YouTuber with the consumer and to the YouTuber credibility. Finally, the value of R^2_{Adjusted} shows that these predictors account for 58.6% of consumers' attitude towards the brand. A greater credibility of the influencer, a greater congruence of the influencer with the brand and a greater congruence of the influencer with the consumer are characteristics that assume a decisive and positive role in consumers' attitude towards the brand.

M. I. B. Ribeiro · A. J. G. Fernandes
Escola Superior Agrária, Instituto Politécnico de Bragança, Centro de Investigação de Montanha, Bragança (CIMO), Campus Santa Apolónia, 5300-253 Bragança, Portugal
e-mail: xilote@ipb.pt

A. J. G. Fernandes
e-mail: toze@ipb.pt

I. M. Lopes (✉)
Escola Superior de Tecnologia e Gestão, Instituto Politécnico de Bragança, Unidade de Pesquisa Aplicada em Gestão – IPB, Campus de Santa Apolónia, Bragança Centro ALGORITMI da Universidade do Minho, Bragança, Portugal
e-mail: isalopes@ipb.pt

51.1 Introduction

Massive access to the Internet has enabled the exponential growth of influencer marketing, fostering a change in the marketing paradigm. Influencer marketing is a powerful and essential marketing tool [1], not only for marketers, but also for consumers who want entertainment and ideas about new products and brands [2]. Influencer marketing is usually a marketing strategy that involves low investment and high efficiency, as long as followers trust the influencer and his/her opinion [3, 4]. Influencer marketing is basically a word-of-mouth (WOM) marketing strategy, which is commonly used today due to the growing number of influencers on the Internet [5].

Currently, social value and influence are undoubtedly the most important concepts within the field of Web marketing [5]. The development of the Internet has enabled the appearance of new platforms, in which anyone can produce and share content. Many influencers are just people like us, which is why many individuals, especially the younger ones, trust their opinions on a certain product or service [6]. One of the most widely used platforms is YouTube, where the videos made by users are increasingly more popular [7]. YouTubers are considered to be influencers, opinion-makers and trendsetters. Thus, they stir up more interest from consumers than the marketing developed by the brand itself [8]. Users tend to rely more on informal information regarding products and brands which accounts for consumers' personal experience rather than on traditional advertising directly associated with the brands [9]. From the consumers' point of view, the credibility perceived from WOM is higher than common commercial marketing. Within this framework, YouTube has become one of the platforms most visited by consumers looking for information on products before purchase, and such contents affect the purchase intention significantly [10].

The most successful influencers manage to establish such a high level of trust with their followers that the sponsored content is perceived as authentic and genuine, even when consumers know they are being paid [11]. Trust is paramount in building up a relationship between influencer and follower, especially when the influencer has not yet reached a privileged status within the market and when contact with followers does not take place face to face [12]. Credibility is associated with the tendency to believe or trust somebody. Furthermore, being reliable is being trustworthy, sincere and principled. Also, a reliable individual must have knowledge, skills and experience regarding the product or service they are offering or promoting [13]. On the other hand, the congruence of the YouTuber with the brand is crucial to trigger a positive attitude of the consumer towards the brand [14, 15]. The YouTuber must relate to the brand and share similar values in order to communicate with their followers effectively and successfully [16]. Therefore, it is important that the YouTuber/brand relationship is a win-win one, with positive effects for both parties. Also, besides the congruence of the YouTuber with the brand, the congruence of the influencer with the consumer is also crucial, since the YouTubers ends up personifying the brand and their goal is to gain more and new consumers every day [17]. Thus, the YouTuber will have to succeed in creating a connection with consumers, leading them to relate

to them and become more involved with the brand, making them believe that their choice/purchase will be more beneficial to them than the choice of other brands.

51.2 Methods

This is a quantitative and cross-sectional study, whose aim was to determine the impact of YouTubers' credibility and congruence in consumers' attitude towards the brand. A questionnaire was conducted based on a non-probabilistic sample of 1642 students among a total of 385,247 students enrolled in Portuguese higher education in 2019 [18]. The margin of error was 1.41% with a 95% confidence level.

The questionnaire was developed in digital format using Google Docs. Later, it was sent by e-mail to students attending higher education in Portugal in the 2019/2020 academic year. Students' participation was voluntary and anonymity and data confidentiality were ensured to all participants. The questionnaire was composed of three sections. The first section comprised sociodemographic (nationality, district of residence, gender and age) and academic questions (degree course, attended year and attendance mode); the second one contained questions regarding consumer attitude towards the brand using a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) (Table 51.1).

The third and last section contained questions about the YouTuber's credibility, the congruence of the YouTuber with the brand, and the congruence of the YouTuber with the consumer, using a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) (Table 51.2).

The statistical data treatment was conducted using the software IBM SPSS version 26.0. Initially, the data analysis involved the use of descriptive statistics, namely the calculation of absolute and relative frequencies, as well as the calculation of measures of central tendency (mean, mode and median) and measures of dispersion (maximum, minimum and standard deviation) [23, 24].

For the analysis of the questionnaire's reliability, Cronbach's Alpha coefficient was used. The value must be positive, ranging from 0 to 1. Values higher than 0.9 mean that internal consistency is very good; between 0.8 and 0.9 mean it is good; between 0.7 and 0.8 correspond to reasonable; between 0.6 and 0.7 to weak; and values below 0.6 are not admissible [25].

Table 51.1 Dependent variable

Variables	Items
0. Consumer attitude towards the brand [19]	1. I have an extremely favourable attitude towards this brand 2. I like this brand very much 3. My attitude towards this brand is extremely positive

Table 51.2 Independent variables

Variables	Items
1. YouTuber credibility [20]	1. I think this YouTuber is trustworthy 2. I think this YouTuber is sincere 3. I feel like I trust this YouTuber
2. Congruence of the YouTuber with the brand [21]	4. It makes sense to me that this YouTuber sponsors this brand 5. I understand why this brand is related to this YouTuber 6. It makes sense to me that this brand is associated with this YouTuber 7. When I heard about this partnership, I understand the brand better 8. This YouTuber sponsoring this brand says something about the brand 9. I think it is relevant that this brand is associated with this YouTuber 10. It is sensitive that this brand is associated with this YouTuber 11. I can see the link between the brand and the YouTuber 12. To me, the message the brand wants to send with this partnership is clear
3. Congruence of the YouTuber with the consumer [22]	13. This person shares similar interests with me 14. This person has similar values to me 15. This person is very similar to me

The R-Pearson correlation test was used in the bivariate analysis. This test allows calculating the correlation coefficient R, which varies between -1 (perfect inverted/negative correlation) and 1 (perfect direct/positive correlation). Values close to zero indicate a weak correlation and values close to 1 indicate a strong correlation [23]. It tests the null hypotheses:

H01: YouTuber's credibility is not correlated with the consumer's attitude towards the brand.
H02: The congruence of the YouTuber with the brand is not correlated with the consumer's attitude towards the brand.
H03: The congruence of the YouTuber with the consumer is not correlated with the consumer's attitude towards the brand.

Finally, a multiple linear regression model was estimated so as to determine whether factors such as the YouTuber credibility (X_1), the congruence of the YouTuber with the brand (X_2) and the congruence of the YouTuber with the consumer (X_3) are predictors of the consumer's attitude towards the brand (Y) [24].
The multiple linear regression model used is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon \tag{51.1}$$

where:

Y Consumer attitude towards the brand
X_1 YouTuber credibility
X_2 Congruence of the YouTuber with the brand
X_3 Congruence of the YouTuber with the consumer
β_0 Constant
β_1 Parameter of the YouTuber credibility variable
β_2 Parameter of congruence of the YouTuber with the brand variable
β_3 Parameter of congruence of the YouTuber with the consumer variable
ε Errors or residuals of deviations.

Estimates for the parameters β_0, β_1, β_2 and β_3 were calculated by the method of least squares. In this method, estimates of regression parameters are obtained so that errors or residuals of deviations are minimal [24].

The variance inflation factor (VIF) was calculated to diagnose multicollinearity. Multicollinearity is a model fit problem that can impact parameter estimation. Generally, the VIF is indicative of multicollinearity problems if VIF >5. The tolerance index was also calculated for the same purpose. Tolerance <1 reveals no multicollinearity, from 1 to 0.10 indicates acceptable multicollinearity and below 0.10 indicates problematic multicollinearity [24].

In order to verify whether the model is significant, an analysis of variance was conducted to verify whether or not any of the independent variables can influence the dependent variable. The analysis of variance tests the null hypothesis of the parameters being null (H_0: $\beta_0 = \beta_1 = \beta_2 = \beta_3 = 0$) against the alternative hypothesis of not all being null (H_1: $\exists\, i$: $\beta_i \neq 0$) [24]. The rejection of the null hypothesis only allows drawing the conclusion that at least one β_i is nonzero. In order to find out which parameter is nonzero, multiple tests must be performed. For this, t-test was used to test the null hypothesis of Y not varying linearly with X (H_0: $\beta_i = 0$) against the alternative hypothesis of Y varying linearly with X ($H1$: $\beta_i \neq 0$). Thus, the influence of each of the independent variables on the dependent variable was tested [24].

The quality of the model fit was measured by calculating the adjusted coefficient of determination (R^2). Basically, this coefficient indicates the extent to which the model was able to explain the collected data [24].

For the execution of the analytical study, a degree of confidence ($1 - \alpha$) of 99% was used, to which the correspondent level of significance (α) is 1%. The statistical decision rule is to reject the null hypothesis (H0) when the p-value or significance probability is inferior or equal to α [24].

51.3 Results

The age of the students varied between 17 and 50 years old, being the average age 20.1 (SD = 2.724) years old, and the curricular year they attended varied between 0 and 5, with the median and mode being equal to 1 (Table 51.3).

As shown in Table 51.4, among the total of 1642 respondents, the majority was female (66.3%), Portuguese (87.6%) and attended the first year (51.2%) in an ordinary full-time attendance mode (87.5%). Most students lived in the north of Portugal, namely, Porto (26.8%), Bragança (24.5), Braga (15.9%) and Vila Real (9.2%).

As shown in Fig. 51.1, most students knew and followed a YouTuber (67.7%).

When asked about the influencer they follow the most, the responses were very dispersed. However, Paulo Borges, an entertainer, better known as Wuant was the most referenced influencer. In 1000 respondents, he was referred to in 9% of the answers. Wuant is a YouTuber, Rapper and Portuguese artist, known for his humorous characteristic that is present in most of his projects. Helena Coelho (7.8%), the second most mentioned YouTuber is a Portuguese model and television presenter that operates in the fashion and beauty sectors. Another recurrent name was Filipe Neto (5.7%), an entertainer, YouTuber, businessman, actor, comedian, writer and Portuguese-Brazilian philanthropist. In 931 answers, the brands that respondents associated with the YouTuber they follow the most were Adidas (footwear and sportswear for men and women), Sephora (makeup, beauty and perfumery) and Tezenis (underwear, swimsuits and bikinis for women), as shown in Fig. 51.2.

In all the dimensions analysed, namely YouTuber's credibility, congruence of the YouTuber with the brand, congruence of the YouTuber with the consumer and consumer's attitude towards the brand, the mean point of the answer interval was 4.0. This means that below 4.0, students had a low level of agreement; equal to 4.0, their level of agreement was moderate; and above 4.0, their level of agreement was high. As shown in Table 51.5, all the dimensions registered mean values above the moderate level of agreement, namely consumer's attitude towards the brand (Mean = 5.13; SD = 1.739), YouTuber's credibility (Mean = 5.49; SD = 1.660), congruence of the YouTuber with the brand (Mean = 5.11; SD = 1.743) and congruence of the YouTuber with the consumer (Mean = 4.88; SD = 1.788).

Cronbach's Alpha coefficient reveals the reliability of the data collected through the questionnaire. Table 51.5 shows that, for the 15 items of the three dimensions (independent variables), namely YouTuber's credibility (X_1), congruence of the YouTuber with the brand (X_2), congruence of the YouTuber with the consumer (X_3), and for the three questions constituting the dependent variable consumer's attitude towards the brand (Y), the internal consistency was 0.942, 0.959, 0.961 and

Table 51.3 Sociodemographic and academic characterization (quantitative variables)

Variables	Mean	SD	Median	Mode	Minimum	Maximum
Age (years)	20.1	2.724	19	18	17	50
Attended year	1.7	0.844	1	1	0	5

Table 51.4 Sociodemographic and academic characterization (qualitative variables)

Variables	Groups	Frequencies	
		Absolute (*n*)	Relative (%)
Gender	Female	1088	66.3
	Male	554	33.7
Age classes	17–18 years old	441	26.9
	19–20 years old	734	44.7
	>20 year old	467	28.4
Nationality	Portuguese	1438	87.6
	Other	204	12.4
Other nationality (*n* = 204)	German	3	1.5
	American	1	0.5
	Angolan	10	4.9
	Brazilian	23	11.3
	Cape Verdean	73	35.8
	Canadian	1	0.5
	Colombian	1	0.5
	Spanish	7	3.4
	French	5	2.5
	Guinean	22	10.8
	Moroccan	1	0.5
	Romanian	1	0.5
	Russian	1	0.5
	São Tome and Príncipe	10	4.9
	Switzerland	2	1
	Turkish	3	1.5
	Not specified	40	19.6
District of residence (Portugal) (*n* = 1438)	Aveiro	99	6.9
	Braga	229	15.9
	Bragança	352	24.5
	Castelo Branco	37	2.6
	Coimbra	15	1
	Guarda	16	1.1
	Lisboa	54	3.8
	Porto	385	26.8
	Viana do Castelo	25	1.7
	Vila Real	132	9.2
	Viseu	55	3.8

Table 51.4 (continued)

Variables	Groups	Frequencies	
		Absolute (*n*)	Relative (%)
	Other	37	2.7
Attended year	Zero year	5	0.3
	First year	841	51.2
	Second year	485	29.5
	Third year	265	16.1
	Fourth year	39	2.4
	Fifth year	4	0.2
	Missing	3	0.2
Attendance mode	Ordinary	1436	87.5
	Student worker	206	12.5

Fig. 51.1 Respondents who know and follow a YouTuber

[NOME DA CATEGORIA] 32.3%

[NOME DA CATEGORIA] 67.7%

YouTubers

Filipe Neto 5.7%
Helena Coelho 7.8%
Wuant 9.6%

Brands

Tezenis 2.9%
Sephora 3.2%
Adidas 4.2%
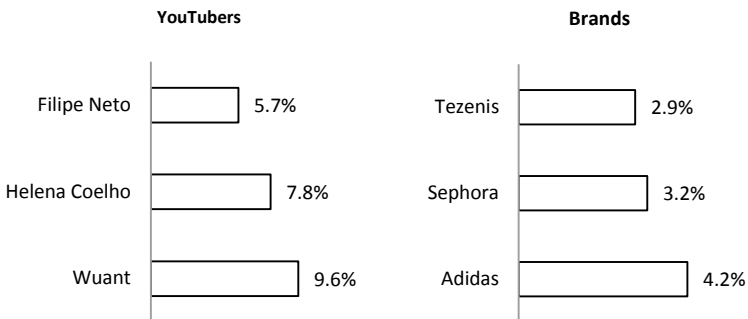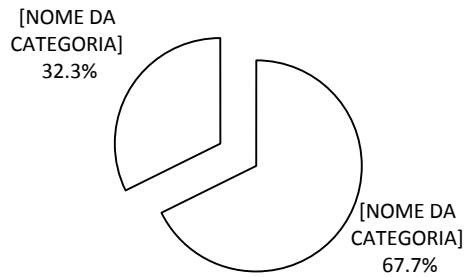
Fig. 51.2 Top three YouTubers and brands most referenced by respondents

0.804, respectively. The levels of reliability showed that the dimensions considered in this study are adequate to measure consumer's attitude towards the brand.

Table 51.5 Mean, standard deviation, Cronbach's Alpha and number of items per dimension

Dimensions	Mean	SD	Cronbach's Alpha	Number of items
0. Consumer attitude towards the brand (Y)	5.13	1.739	0.942	3
1. YouTuber's credibility (X_1)	5.49	1.660	0.959	3
2. YouTuber's congruence with the brand (X_2)	5.11	1.743	0.961	9
3. YouTuber's congruence with the consumer (X_3)	4.88	1.788	0.804	3

Table 51.6 Correlation between consumer's attitude towards the brand with YouTuber's credibility, YouTuber's congruence with the brand and YouTuber's congruence with the consumer

Variables	Statistics	(0)	(1)	(2)	(3)
Consumer's attitude towards the brand (0)	R	1.000			
	p-value	–			
YouTuber's credibility (1)	R	0.572	1.000		
	p-value	0.000*	–		
YouTuber's congruence with the brand (2)	R	0.743	0.615	1.000	
	p-value	0.000*	0.000*	–	
YouTuber's congruence with the consumer (3)	R	0.644	0.643	0.747	1.000
	p-value	0.000*	0.000*	0.000*	–

*Statistically significant correlation at the significance level of 0.1%

As shown in Table 51.6, the consumer's attitude towards the brand presents a correlation statistically significant, positive and moderate with the YouTuber's credibility ($R = 0.572$; p-value $= 0.000$) and with the congruence of the YouTuber with the consumer ($R = 0.644$; p-value $= 0.000$). Finally, the correlation between the consumer's attitude towards the brand and the congruence of the YouTuber with the brand is positive and strong ($R = 0.743$; p-value $= 0.000$).

As shown in Table 51.7, the estimated regression model is statistically significant ($F = 468.671$ and p-value $= 0.000 < 0.01$). Also, it was found that the congruence of the YouTuber with the brand ($t = 17.253$; p-value $= 0.000$), the congruence of the YouTuber with the consumer ($t = 4.521$; p-value $= 0.000$) and the YouTuber's credibility ($t = 4.550$; p-value $= 0.000$) are predictors of consumers' attitude towards the brand. Moreover, the value of R^2_{Adjusted} shows that these predictors account for 58.6% of consumers' attitude towards the brand.

The tolerance index and VIF indicate no multicollinearity problems. That is, the assumptions of the linear regression model were verified. Based on the results obtained (Table 51.7), the equation of the multiple linear regression model is as follows:

$$Y = 0.446 + 0.138X_1 + 0.574X_2 + 0.152X_3 + \varepsilon \qquad (51.2)$$

Table 51.7 Multiple linear regression model

Variables	Non-standardized	Standardized		t	p-value
	β	Error	β		
Constant	0.446	0.133	–	3.347	0.001*
X_1	0.138	0.030	0.128	4.550	0.000*
X_2	0.574	0.033	0.556	17.253	0.000*
X_3	0.152	0.034	0.150	4.521	0.000*

$N = 991$; $R^2_{\text{Adjusted}} = 0.586$; $F = 468.671$; p-value $= 0.000$*; Variance inflation factor (VIF) < 5; Tolerance index >0.1 and <1

Dependent variable: Consumer's attitude towards the brand
*Statistically significant difference at the significance level of 1%

51.4 Discussion and Conclusion

The results indicate that the congruence of the YouTuber with the brand, the congruence of the YouTuber with the consumer and YouTuber's credibility are predictors of consumers' attitude towards the brand. Also, the congruence of the YouTuber with the brand has shown to be a good predictor of consumers' attitude towards the brand and an even better predictor when compared to the congruence of the YouTuber with the consumer and to the YouTuber's credibility. These results are in line with those obtained by others authors that concluded when there is congruence of the YouTuber with the brand, consumers display a positive attitude towards the brand [14, 15]. Also, because they increasingly look for a reality similar to their own, consumers assume that digital influencers, YouTubers in this case, have ideas and interests similar to theirs, which triggers their positive attitude towards the brand. A higher influencer's credibility and a closer relationship between the influencer and the followers play an important and positive role in building up consumers' loyalty to the influencer and to the brand [26]. This study contributes to understand the role of digital influencers, common people or celebrities in the construction of a relatable relationship between the YouTuber who represents the brand and consumers.

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Part XIII
Web Marketing, e-commerce and v-commerce

Chapter 52
Dissemination of Corporate Web Information in Spanish: The Case of the US Healthcare Sector

Mar Díaz-Millón◉ **and María-Dolores Olvera-Lobo**◉

Abstract In the business context, to achieve international projection, the use of several languages is essential. The healthcare sector is not an exception, as it is a remarkable domain of specialization. So, the analysis of the keys to corporate language management—considered as the application of communicative management strategies regarding business internationalization processes—on the Web is fundamental. The main objective of this work is to identify the main features that multilingual corporate Web communication presents, specifically in the English > Spanish language combination. To this end, a sample of corporate Web sites of US companies in the healthcare sector extracted from the Fortune 500 ranking, published annually by Fortune magazine, is analyzed. A statistical analysis of frequencies and correlations has been carried out. Results show that 58.3% of the Web sites studied have undergone some kind of linguistic management processes from a multilingual perspective. In addition, Spanish language occupies a prominent role in the processes of corporate Web information dissemination. The data obtained seem to indicate that healthcare US corporations tend to make considerable efforts to disseminate their Web information in a wide range of languages. This endeavor seems to increase in the case of Spanish language. However, these efforts are still limited.

52.1 Introduction

The healthcare sector is one of the largest in the world. In particular, the US healthcare sector is probably one of the major industries in the world. For this reason, studying the characteristics of the dissemination of corporate Web information of these companies is especially relevant to know the keys of a successful language management for the internationalization of companies.

M. Díaz-Millón (✉) · M.-D. Olvera-Lobo
University of Granada, 18012 Granada, Spain
e-mail: mardiazmillon@ugr.es

M.-D. Olvera-Lobo
e-mail: molvera@ugr.es

The Web is an established means of disseminating information because it is not subject to geographical limits, and it reaches a very large audience. Given this nature and, above all, its easy access from anywhere in the world, it is necessary to offer multilingual information capable of meeting the needs of a wide range of users, thus overcoming language barriers [1]. Specifically, in the business context, for most companies, the first step in getting started in digital marketing is to create a Web site [2]. Regardless of the size of the corporations and their field of activity, in order to achieve an international projection, the use of one or several foreign languages is essential [3], since it allows to bring users from diverse linguistic and cultural contexts closer together.

In the United States, this circumstance is compounded by the fact that it has a considerable population of speakers of languages other than English. According to the United States Census Bureau [4], there are more than 65 million people living in the United States who speak a language other than English in their homes. This suggests that the United States has a significant population that would need to access information (including online information) in a language other than English.

It is estimated that there are about 40 million Spanish speakers living in the United States [5]. In addition, Spanish is the third most used language on the Web, and is even the second most used on Twitter in a mostly English-speaking city like New York [6]. This makes it especially important for US corporations to disseminate their Web information in Spanish. In this way, their language management processes will be geared toward both an international and a national Spanish-speaking audience.

The main objective of this work is to identify the main features that characterize multilingual corporate Web communication, specifically in the English > Spanish language combination. To this end, a sample of corporate Web sites of US companies from the healthcare sector extracted from the Fortune 500 ranking [7], published annually by Fortune magazine, is analyzed. This main objective is subdivided into two specific objectives: SO1) To identify the strategies applied in the multilingual dissemination of the corporate Web sites of the US healthcare sector and, SO2) To determine the role of Spanish language in the dissemination of the information in these Web sites and the particularities it presents.

52.2   Theoretical Background

Globalization brought about by technological advances has opened the world to international trade more than at any other time in history [8]. However, this new scenario has also given rise to many communication problems [9]. One of these problems is the language and cultural barriers between users.

In response to these communication problems, in the language service industry new professional profiles characterized by the use of new software tools, the mastery of communication channels and the acquisition of market knowledge have emerged [10]. Among these profiles, localization and transcreation stand out.

Localization is understood as a communicative, technological, textual, and cognitive process through which Web sites are modified to be used by audiences around the world other than those initially intended [11]. Transcreation is understood as the process through which certain parts of a text are translated and others are creatively reinterpreted [12–14]. Both activities entail key activities in the internationalization processes of companies of all sizes and from all sectors through the Internet.

The Web has increasingly become a regular source of health information by connecting people to health content, experts, and support [15]. Medical corporate Web sites (among other types of medical materials, such as leaflets, clinical guides or online forums) have recently emerged as the main source of information for the general public [16]. Therefore, Web sites with medical information have a considerable volume of users.

The healthcare sector is also one of the largest business industries in the world. A small proof of this is its outstanding presence in the renowned Global 500 [17] ranking, an annual classification of the 500 largest corporations in the world, according to their income, compiled and published annually by Fortune magazine. In 2019, the 26 healthcare corporations included in the ranking—of which 15 are US corporations—exceeded 2 trillion dollars in turnover. For these companies, localization and transcreation processes are a key to overcome the linguistic and cultural barriers that separate them from potential customers, both international and national.

According to the United States Census Bureau [5], out of the more than 65 million people who speak a language other than English at home, 25 million consider their level of English to be "less than very good." Thus, failing to adapt this type of product imposes a series of barriers to access the healthcare system for certain population segments [18] and implies a potential loss of consumers for companies [19, 20].

Specifically, in the United States, interest has grown in recent years in adapting linguistically and culturally healthcare information resources, from leaflets to IT tools, to make them more accessible to the Spanish-speaking population. According to the 2018 census, there are currently more than 16 million Spanish speakers in the US who consider their English skills to be "less than very good" [5]. In addition, some research suggests that for the Latino population, the language problems in healthcare settings, and the lack of information in Spanish are barriers to seeking healthcare [21, 22].

Some authors have worked on transcreation techniques (defined differently by each author) to adapt health information material for the Latino population in the U.S. [23–28]. These works range from analyzing translation errors in order to establish a guide to properly transcreate information materials for Latino population, to actively carry out processes of transcreation (leaflets and informational materials mostly, but also IT tools). Authors define transcreation differently in their works, but there seems to be a shared notion of transcreation as a combination of translation and cultural adaptation. Thus, the concern with linguistically and culturally adapting health information for the Spanish-speaking population has been a concern in the United States over the past decade, and transcreation techniques seem to be acknowledged as a useful tool to do so.

Still, Spanish is the second language in the world with the highest number of native speakers, and is the second language of international communication. In 2018, 7.6% of the world's population is Spanish-speaking [6]. Thus, Spanish becomes a language of great relevance in the international context, but also, in the national context of the US.

52.3 Methodology

For this work, data regarding the linguistic management of the sample Web sites were collected such as: (1) How many companies are offering their Web site in more than one language, (2) In how many languages companies show their content, (3) How many Web sites adapt their content into Spanish language, (4) To which extent Spanish-language variants are used, and (5) How they manage the URLs on the Web sites adapted into Spanish. The data were treated with the SPSS statistical package—version 22—through the analysis of frequencies and correlations.

The prestigious Fortune 500 ranking—which is complementary to the already mentioned Global 500 ranking—was used to select the analysis sample. This is an annual ranking of the largest 1000 U.S. corporations published by Fortune magazine. It ranks corporations based on their revenue in the last year and only includes companies that are incorporated and operating in the United States [7]. It also classifies the companies included according to the sector to which they belong. For this work, only the 72 companies included under the heading 'Health care' have been considered. The annual turnover of these companies ranges from $19 billion to $226 billion.

According to the Fortune 500 ranking, the analyzed Web sites belonged to seven subsectors: Insurance and Managed Care (9 companies, 12.5%), Wholesalers: Health Care (6 companies, 8.3%), Pharmacy and Other Services (12 companies, 16.7%), Pharmaceuticals (15 companies, 20.8%), Medical Facilities (11 companies, 15.3%), Medical Products and Equipment (18 companies, 25%), and Scientific, Photographic, and Control Equipment (1 company, 1.4%).

52.4 Results and Discussion

52.4.1 Linguistic Management and Diversity

Data were obtained regarding the language in which the Web sites offered their content. Of the 72 Web sites analyzed (see Fig. 52.1), three were not available if accessed from Spain, the location from which the analysis was carried out. Of the remaining 69, 27 offered their content in only one language and 42 offered their content in more than one language. That is, 58.3% of the Web sites in the sample had undergone some kind of multilingual management process. The total number of
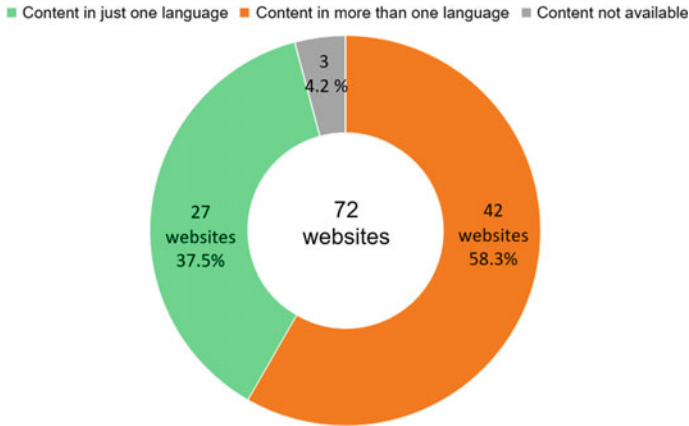
Fig. 52.1 Distribution of the sample according to the available languages

Web sites that were available from Spain ($n = 69$) offered their content in English, the official language of the US.

After analyzing how many languages the available Web sites offered, a frequency analysis showed that they presented their content in 7.28 different languages on average (including the original English). The maximum number of languages available in a single Web site was 34. However, 53.6% of the sampled Web sites had their content available in three languages or less. Therefore, there is a tendency to make language management efforts only in a small number of languages.

Overall, the Web sites offered up to 40 different languages. The frequency analysis determined that the most frequent was English, since it is the original language in which these Web sites were developed.

52.4.2 Presence of Spanish Language

Among the foreign languages identified, Spanish was present in 39 of the 72 Web sites (54.2%), meaning that it is the most common foreign language (Fig. 52.2).

In fact, after applying the correlation analysis, Spearman's rho coefficient revealed that there was a very significant very strong positive correlation (coefficient = .919**) between the availability of the content in more than one language and the presence of Spanish among those languages (see Table 52.1).

Moreover, the correlation analysis showed that there was a considerable very significant positive correlation (coefficient = .842**) between the number of languages in which a Web site offered its content and the presence of Spanish among those languages. That is, the more languages a company offered its content in, the more elevated was the probability of finding Spanish among those languages.

Fig. 52.2 Distribution of Web sites according to the presence of content in Spanish
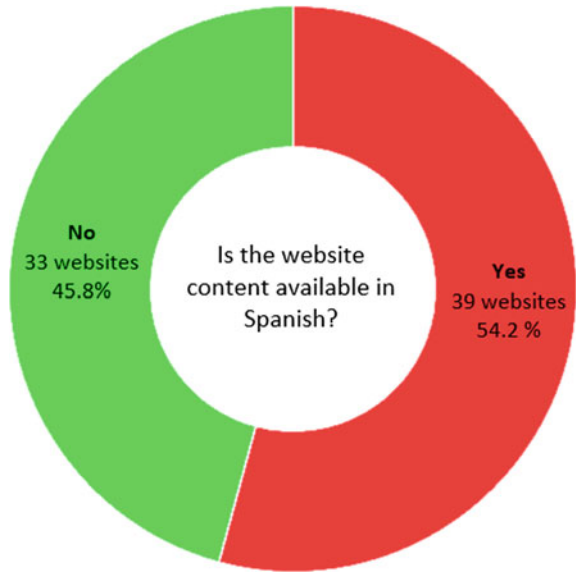
Table 52.1 Spearman's rho correlation for content available in Spanish*Content available in more than one language

			Is the content available in Spanish?	Is the content available in more than one language?
Spearman's rho	Is the content available in Spanish?	Correlation coefficient	1.000	0.919**
		Sig. (2-tailed)		0.000
		N	72	72
	Is the content available in more than one language?	Correlation coefficient	0.919**	1.000
		Sig. (2-tailed)	0.000	
		N	72	72

**Correlation is significant at the 0.01 level (2-tailed)

Moreover, two trends were observed in the sample to label the content in Spanish. On the one hand, 23.1% ($n = 9$) of the Web sites labeled their content as "Spanish," in a generic way, without specifying a country or geographical area (Fig. 52.3). The rest of the Web sites localized their content in Spanish according to countries or wide geographical areas, e.g., "Latinoamérica" [Latin America]. Special mention should be made of Quest Diagnostics Web site, which presented both strategies (combining the "Spanish" label and localizing the content for Mexico). Figure 52.3 shows all the varieties of Spanish present in the sample sites ordered by the percentage of sites
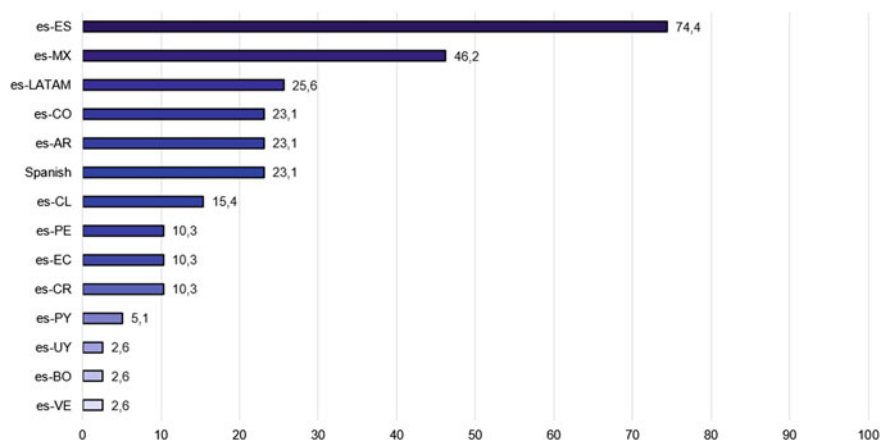
Fig. 52.3 Distribution of Spanish varieties in the sample (percentages)

offering them (out of 39 presenting their content in Spanish). The codes of the ISO 639–4:2010 [29] standard have been used to identify each Spanish-language variety.

On average, these Web sites offered their content in Spanish in 2.74 locations or varieties, but 41.3% of the sites did it in two varieties, being this the most common value. The maximum number of Spanish-language locations on the same Web site was 11, which is a relatively wide range.

Overall, the Web sites presented 14 Spanish-language locales. A total of 74.4% ($n = 29$) of the sites offered Spanish-language content from Spain (es-ES), making it the most common Spanish-language variety in the sample. The second most common variety of Spanish was Mexican (es-MX) Spanish ($n = 18$, 46.2%). In the third place, 25.6% ($n = 10$) of the sites localized to Latin-American Spanish (es-LATAM).

The calculation of Spearman's rho coefficient revealed that there was a very significant medium positive correlation between the number of languages available on a Web site and the number of varieties of Spanish it offered. Conversely, there was a very significant medium negative correlation between the number of languages of a Web site and the tendency to label Spanish content in a generic way (see Table 52.2). That is, the more languages a Web site offered, the less likely it was that they would not specify a region or country for Spanish content. That is, when a company adapts its Web content to a wide variety of languages, there is a tendency to include a large number of Spanish-speaking locales.

52.4.3   URL Management

Three ways of dealing with URLs where content is available in Spanish were identified. The division of Aguillo [30] was taken as a reference:

Table 52.2 Spearman's rho correlation for number of languages available in a Web site*Spanish content labeled as generic "Spanish"

			Number of languages available in a Web site	Spanish content labeled as generic "Spanish"
Spearman's rho	Number of languages available in a Web site	Correlation coefficient	1.000	−0.592[**]
		Sig. (2-tailed)		0.000
		N	39	39
	Spanish content labeled as generic "Spanish"	Correlation coefficient	−0.592[**]	1.000
		Sig. (2-tailed)	0.000	
		N	39	39

**. Correlation is significant at the 0.01 level (2-tailed)

- Top-level domain: physical place interconnected to the Internet network where the information is deposited in electronic format accessible through http protocol; a computer acting as a WWW server with its own differentiated IP number.
- Web page or directory: file or set of computer files that constitute an identifiable html document through the network with its own characteristic URL, which can be in any format.
- Web site: a set of hierarchically linked pages that constitute a differentiated and independent unit, both in terms of content (documentary unit) and organization (institutional unit).

According to this classification, in the sample, 48.7% of the Web sites adapted their URL for content in Spanish through a directory within the main Web site, 41% did so by creating a top-level domain for that content, and only 10.3% did so through a Web site. In other words, the efforts to host content in Spanish were mostly directed at creating a division within the server, although there is a significant tendency to create a new server.

52.5 Conclusions

This work has involved the study of the language management from a multilingual perspective of a sample of 72 Web sites of large corporations in the US healthcare sector. The statistical analysis of frequencies and correlations made it possible to draw a series of conclusions.

More than half of the Web sites in the sample (58.3%) had been subjected to some sort of linguistic management, i.e., they displayed their content in more than one

language. This suggests a general trend in this type of companies: to carry out some kind of linguistic adaptation in order to reach audiences different from the original one.

Overall, Web sites offered up to 40 different languages, with the maximum number of languages available on a single Web site being 34. However, 53.6% of the sites have their content in three languages or less. This implies that although some companies are making great efforts to disseminate their Web information in a wide variety of languages, for most companies, these efforts are still limited.

The Spanish language occupies a prominent place in the sample: It is present in 54.2% of the Web sites, and it is the most frequent foreign language. In addition, correlation analysis shows that if linguistic management efforts are made, the probability of them being made toward Spanish is very high. This probability also increases with the number of languages toward which the Web site content is adapted.

Web sites that offered their information in Spanish did so in up to 14 different varieties. The maximum number of varieties on a single Web site was 11, and on average, 2.74 varieties were offered per Web site. Correlation analysis shows that the more languages there are on a Web site, the more Spanish varieties are available. This seems to suggest that the more international and varied the public a corporation wants to access through the Web, the more interest there is in adapting that content to different Spanish varieties.

However, 41.3% of the sites offered two varieties or less, so, again, efforts to adapt to different language varieties are still limited. The most common variety was Spanish from Spain (es-ES), while the generic label "Spanish is present in only 23.1% of the Web sites. This shows that, when these companies adapt their content into Spanish, they do so with an international audience in mind, rather than a national Spanish-speaking one. So, their linguistic management strategies will be in line with localization or even transcreation processes.

Finally, the characteristics of the URL management for the content in Spanish were analyzed. While 48.7% locate their Spanish content through a directory, 41% do so through a top-level domain. Although the majority makes a moderate IT investment, there is a great tendency to make a greater investment by purchasing a specific domain for that content. Furthermore, this shows again that there is a great tendency for US companies in the healthcare sector to target an international Spanish-speaking audience.

After achieving the objectives proposed for this study, future lines of research are now opened. For example, the possibility of conducting a similar study with a sample of Web sites developed in other geographical locations to compare the results of both samples. In any case, the analysis of the multilingual dissemination of corporate Web information seems to be a very promising research line.

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Chapter 53
Inspiring Consumers Online: A Proposed Framework Comparing Different Cultures

Muhammad Alreesh, Sandra Maria Correia Loureiro, and Ricardo Godinho Bilro

Abstract The goal of this research is to assess the current status of online trade relations between Kuwait and Portugal. In the current study, we propose a comparative framework called EI-CE-P. We conducted a comprehensive literature review leading to an innovative framework which will be confirmed using two panel samples, one from Portugal and another from Kuwait. This framework will contribute theoretically and managerial to the body of the literature on the topic and to those who deal with online trade.

53.1 Main Objective

The goal of this research is to assess the current status of online trade relations between Kuwait and Portugal. To do so, we examine how firm managers from Portugal and Kuwait use online platforms to engage customers in order to enhance firm performance.

53.2 Literature Review

Through an in-depth review of the prior studies on online relationship marketing (peer-reviewed publications in English) conducted through two major databases Web of Science (WOS) and Scopus online libraries using several keywords applied to the

M. Alreesh
Instituto Universitário de Lisboa (ISCTE-IUL), Lisboa, Portugal
e-mail: dinnis6@hotmail.com

S. M. C. Loureiro (✉) · R. G. Bilro
Instituto Universitário de Lisboa (ISCTE-IUL), Business Research Unit (BRU-IUL), Lisboa, Portugal
e-mail: sandramloureiro@netcabo.pt

R. G. Bilro
e-mail: bilro.ricardo@gmail.com

title, abstract and keywords, such as engagement, experience, performance, online, trade and relationship.

53.2.1 Online Experience

Customer experience (CE) is the experience customers have when they interact with a brand. New progress in mobile technology and its acceptance by many consumers have made it vital for firms to reshape interaction and service delivery features to attain ideal online user experience. Organizations today must discover a way to build emotional connections with their users on their mobile devices and let their customers provide feedback. In other words, customer experience is defined as your customers' perceptions—both conscious and subconscious—of their relationship with your brand resulting from all their interactions with your brand during the customer life cycle.

Klaus [1] identified functionality and psychological factors as the central dimensions of online customer experience. Klaus [1, p. 445] defined online customer service experience as "…the customers' mental perception of interactions with a company's value proposition online. These mental perceptions in turn drive a set of outcomes, namely benefits, emotions, judgements, and intentions". There has been considerable increase and shift in online shopping behaviour as customers have started using Internet-enabled multi-devices [2].

53.2.2 Customer Inspiration (CI)

CI in marketing involves different goals, recipients and sources of inspiration. The marketing domain seems sufficiently different from prior areas of inspiration research (e.g., general psychology, education, sports, creativity) to warrant a domain-specific conceptualization and measurement [3, 4].

A standardized scale is preferred to this practice because its reliability and validity are established, and its use enables comparisons across studies [5].

Inspiration thus bridges the gap between the deliberation phase (i.e., goal setting) and the implementation phase (i.e., goal striving) of goal pursuit [6]. The intent to inspire customers should lie at the heart of marketing, yet CI has received little attention in prior research. By conceptualizing CI and by developing a sound measure for this new construct, our study establishes a first step towards firmly embedding inspiration in management practice.

53.2.3 Online Customer Engagement

Customer engagement is a term which has known increased attention within services marketing literature. Customer engagement, or CE, has been defined as a "…psychological process that models the underlying mechanisms by which customer loyalty forms, as well as the mechanisms by which loyalty may be maintained…" [7, p. 65].

In their definition of CE, Brodie et al. [8] conceptualized engagement as a contextually contingent process that can differ in cognitive, emotional and behavioural intensity. Several studies prompt future research to explore how CE operates across a variety of different contexts [8, 9]. A hedonic and utilitarian service typology may provide such a variety, as it encompasses a range of services that differ in their core consumption purposes [10].

Across marketing literature, customer-provider relationships have typically been explored through the various constituents of a customer's connection with a brand, such as loyalty, satisfaction and participation. Though these constructs may function as individual aspects of brand relationships, they do not define the nature and depth of how brand relationships form and the way in which they may be sustained. Nevertheless, the concept of CE covers this individualistic perspective by delivering marketers a major process that includes the total set of brand-focused activities that encourage customers to form close, emotional and valued bonds with service providers [7, 11].

53.2.4 Firm Performance

Today, performing well with a high degree of customer orientation is vital for the survival of any company [12]. Therefore, evaluating and measuring business performance is vital, since companies are pursuing effective and efficient results. However, due to the absence of a consensual operational definition of FP, there are diverse interpretations of its meaning. Definitions of this concept may be abstract, or general, less or clearly defined [13].

Firm performance is a relevant construct in management research and frequently used as a dependent variable. In spite of its relevance, there is scarcely any consensus about its definition, dimensionality and measurement, which limits advances in research. It suffers from limited conceptualization, selection of indicators based only on convenience, and no proper consideration of its dimensionality.

53.2.5 National Culture-Moderating Variables

In the last decades of the twentieth century, researchers tried to settle a very old question: why do societies behave so dissimilarly from each other? One of the most famous essayists is Hofstede [14], with a seminal work that defined five big cultural

dimensions: power distance, uncertainty avoidance, individualism versus Collectivism, masculinity versus Femininity and one that was secondarily added—short versus Long-term orientation. Other authors ensued, approaching these issues, with some of them disagreeing regarding the dimensionality, nature, grouping or temporality of those components. Recently, the field turned its eyes into the way different cultures connect with the world of online commerce and how willing citizens and companies are to trust these new tools and agents.

The other facet that may play an instrumental role in the proposed model is the type of industry. Therein, various business realities come into play: services versus Mass manufacturing, which in more detail presupposes divergent types of work routines, touchpoints (online or offline) between buyers and sellers and a manifold of exchanging relationships like B2B, B2C, B2E, B2G, B2M, C2B, C2C and others [15, 16] in traditional and electronic commerce.

In order to not only understand the current e-commerce panorama between the two countries (plus how such process could help write a new prosperous page in the commercial and diplomatic history between Portugal and Kuwait) but also how to fulfil the gap found in the literature, while shedding new light upon the chosen constructs, the social exchange theory (SET) was elected the theoretical framework for the research project.

53.3 EI-CE-P Model

A set of existing constructs was chosen (online experience, customer inspiration, online customer engagement, firm performance, national culture), which were included in a proposed model of structural equations, in order to assess the contribution of online experience and customer inspiration to the current status of online trade relations (through online customer engagement), and how these can be improved to the further develop of e-commerce between the two countries. An outline of the proposed is shown in Fig. 53.1.

53.4 Suggested Methodology and Expected Outcomes

Two panels from Portugal and Kuwait will be employed to get the data to be used to confirm the EI-CE-P conceptual framework. The panel will be collected through Qualtrics. The survey will be prepared in order to avoid bias. Thus, scales from prior studies will be employed and the preparation of the questionnaire will take into consideration the distance between items of the same construct, the wording of the items will be translated and back translated into two different languages with the help of language native professors and control variables, as well as socio-demographic variables will be considered.
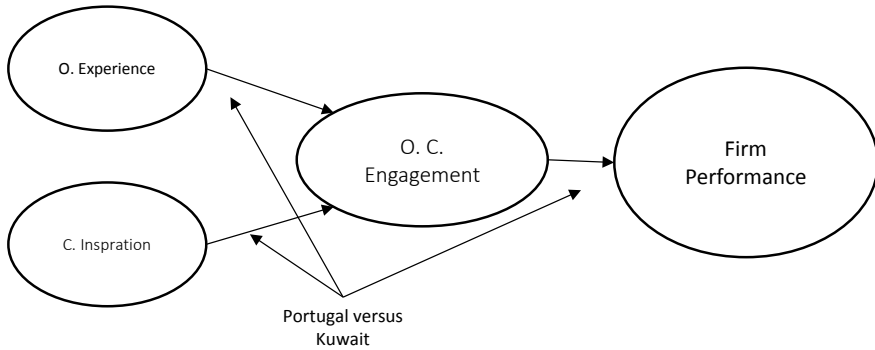
Fig. 53.1 EI-CE-P conceptual framework

As this study to address the status of online trade relations between Portugal and Kuwait, the research findings are expected to have managerial and diplomatic implications, setting the foundations for an international association composed of Portuguese and Kuwaiti corporate leaders/investors with guidelines for multicultural business deals that respect both countries laws and trading needs.

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Chapter 54
Examining the Antecedents of Customer Loyalty Intentions in Using Freemium Streaming Service

Reynaldi Kurniawan and Yeshika Alversia

Abstract One of the ways companies seeking their competitive advantage and gaining revenue from their products is by using a freemium model, where both a free and paid version of the service exist within the platform. This study aims to examine the factors that affects customer's loyalty intention (continuance intention and intention to purchase premium plan) on a freemium streaming service, specifically in music and movie category. From previous research, we identified the influencing factors, namely satisfaction; user characteristics (free mentality and personal innovativeness); relational characteristics (brand familiarity, interpersonal relationship); and marketplace characteristics (value for money, relative advantage, switching cost, and alternative attractiveness). This quantitative cross-sectional study collected data from 978 eligible respondents using self-administered online questionnaire distributed through social media. After confirming that all variables are valid and reliable, we analyze the data and test the hypotheses using structural equation modeling. The results show that satisfaction, brand familiarity, interpersonal relationships, and switching cost significantly affect both continuance intention and intention to purchase, while free mentality and personal innovativeness only significantly affect intention to purchase. Value for money and relative advantage also significantly affect intention to purchase. This study provides insight to companies in online streaming freemium business on how to increase loyalty intentions from their existing customers.

54.1 Introduction

The development of freemium, a combination of free and premium, has become a dominant business model among application developers [20], and streaming service is not an exception. The freemium model has been used by many applications such as cloud storage, music, and movie streaming, or free to play games [18]. Many streaming services use a freemium business model where both free and premium

R. Kurniawan · Y. Alversia (✉)
Universitas Indonesia, Depok, Indonesia
e-mail: yeshika@ui.ac.id

plan are available for the user to choose to. In Indonesia, the country with population of more than 270 million people, the average consumers spend more than two hours daily on watching time which include broadcast, streaming, and watching video on demand, and more than one hour average daily time spent on listening to streaming music [18] which shows Indonesian Internet user's appetite toward online entertainment streaming service. This reason, added with the fact that there has been a constant growth of Indonesian Internet users with 64.8% of Internet penetration in Indonesia in 2018 [5], has created a big market for streaming service provider in Indonesia.

To compete, software companies are finding ways to come up with business model that could generate a high number of users. Free software is being offered to customers with advertisement as the source of the revenue for the developers, and this business model was prevalent among software providers in the early 2000s [19]. However, problem occurs when there has been a low advertising revenue, difficulties in retaining users, and increasing cost of maintenance which makes the business model difficult to be sustainable [22]. Due to this problem, software providers and developers are considering the possibility of charging users, which one of the ways is by selling or implementing subscription fee for its service. The freemium business model is a product or a pricing structure where the core of the service is free, but the revenue is generated through the sales of additional products and premium services [20]. Streaming service that implement a freemium model provides both a free tier and a premium tier for their users to choose, with a limited feature or contents on the free version, and more features or more contents on the premium version.

This research focuses on three characteristics that could expand understanding toward freemium model: user characteristics, relational characteristics, and marketplace characteristics, as well as satisfaction; and how these factors may impact the loyalty intentions of existing customers.

54.2 Theoretical Background

54.2.1 Loyalty Intention

Adopting the previous study by Kim et al. [19], the study uses two types of loyalty intentions as dependent variables, continuance intention and intention to purchase premium features. There are two options available of freemium software to be used, users of the applications can either continue to use the free version (continuance intention) or purchase additional features (intention to purchase) [19]. User continuance intention explains whether the user intends to keep on using the service or to discontinue its use. It is based on the satisfaction, the perceived usefulness, and loyalty incentives to keep on using the service or enhance continuance from the provider by the user [6]. Behavior intention is the most influential predictor of behavior [2], and therefore, this study uses purchase intention to represent the premium purchase

behavior. In the context of freemium software, user of the platform could decide to purchase the premium plan on the service based on their experience of using the service [19].

54.2.2 Satisfaction

Consumer satisfaction is believed as a crucial factor in determining customer purchase intention and continuance intention to use a product or service. It has been demonstrated as one of the most important factors to predict the behavior of consumers [24]. Satisfaction has been defined as the overall evaluation of a product or service that has been developed continuously by the consumer experience [4, 11]. The more satisfied the consumer is, the more likely the consumer will purchase the products. Study by Hsu and Lin [15] has also proven that satisfaction leads to purchase intention in paying for paid mobile application [15] and L. Zhao et al. [27] has measured satisfaction to significantly affect continuance intention [27].

> H1a: *Satisfaction has positive effect on continuance intention*
> H1b: *Satisfaction has positive effect on intention to purchase*

54.2.2.1 User Characteristics

On this study, researchers focus on free mentality and personal innovativeness as the variable for user characteristics, to understand whether users have free mentality and whether innovative users are more likely to be loyal on freemium software. Free mentality is defined as a strong belief that everything online should be free [22]. This free mentality belief is more applicable to digital contents such as games, videos, and music compared to physical goods [23]. Because users are used to paying for physical goods and expect intangible products on the Internet including video and music software to be free or inexpensive [19], therefore, users with free mentality tendency are more reluctant to pay or purchase the premium service.

> H2a: *Free mentality has a positive effect on continuance intention*
> H2b: *Free mentality has a negative effect on intention to purchase*

Personal innovativeness is defined as the willingness of an individual to try out any new information technology [1]. Innovativeness has been found to predicts consumers' willingness to pay [28]. Highly innovative individuals are active information seekers about new idea. Rogers [25] with his diffusion of innovations theory categorized groups of consumers into five adopter categories on the basis of innovativeness: innovators, early adopters, early majority, late majority, and laggards, with the innovators being the earliest to adopt the innovation [25].

> H3a: *Personal innovativeness has a positive effect on continuance intention*
> H3b: *Personal innovativeness has a positive effect on intention to purchase*

54.2.2.2 Relational Characteristics

Relational characteristics measure the relationships between users and the companies [19]. This study measures both the effect of user-to-business interaction which is depicted by the brand familiarity of the software and user-to-user influence which is measured by the interpersonal relationships. Brand familiarity has been defined as consumer's prior related experience toward the brand which includes usage or purchase of a product [16]. Alba and Hutchison [3] have also defined familiarity as the product or service-related experiences by the consumer, where related experience includes the purchasing and usage of the product or service in many situations, information search, advertising exposure, and decision making [3].

> *H4a: Brand familiarity has a positive effect on continuance intention*
> *H4b: Brand familiarity has a positive effect on intention to purchase*

Interpersonal relationship is defined as a relationship formed between a user and a company or between the users themselves [13]. Customer's interpersonal relationship can have two different objects, one of which is between the customers itself. Customer-to-customer relationship could benefit to the long-term relation with the company [13]. It has been studied before that interaction among users exert a significant role on user's intention to continuously using the service and reduce the probability of user's switching to other service [26]. Following the previous research by Kim et al. [19], interpersonal relationship variable is used to measure the interaction of user-to-user and its impact to loyalty intentions [19].

> *H5a: Interpersonal relationship has a positive effect on continuance intention*
> *H5b: Interpersonal relationship has a positive effect on intention to purchase*

54.2.2.3 Marketplace Characteristics

The relationships between the users, companies, and the competing companies are depicted on the variables of marketplace characteristics [19]. This study focuses on value for money, relative advantage, switching cost, and alternative attractiveness as the variables of marketplace characteristics. Value for money refers to users' perception of the monetary value of paid services of freemium software [14]. The greatest value for money offered the most advantageous features of the products compared to other products which is perceived as inferior [17]. Relative advantage is defined as the benefit of premium features compared to the basic free of charge feature [19]. Relative advantage expected to affect purchase decisions on premium features on freemium software, and it is the benefit of using premium features compared to the basic feature that is offered free of charge [19]. Dick and Basu [8] have defined switching cost not only as the monetary cost, but also the cost of time and effort involved in dealing with new providers [8]. Switching cost on this study measures the financial cost, time, and effort that a user had to face when they changed their software used to another. As long as the business is profitable and the market entry barrier easy to be entered, more competitors will join the market, which will increase
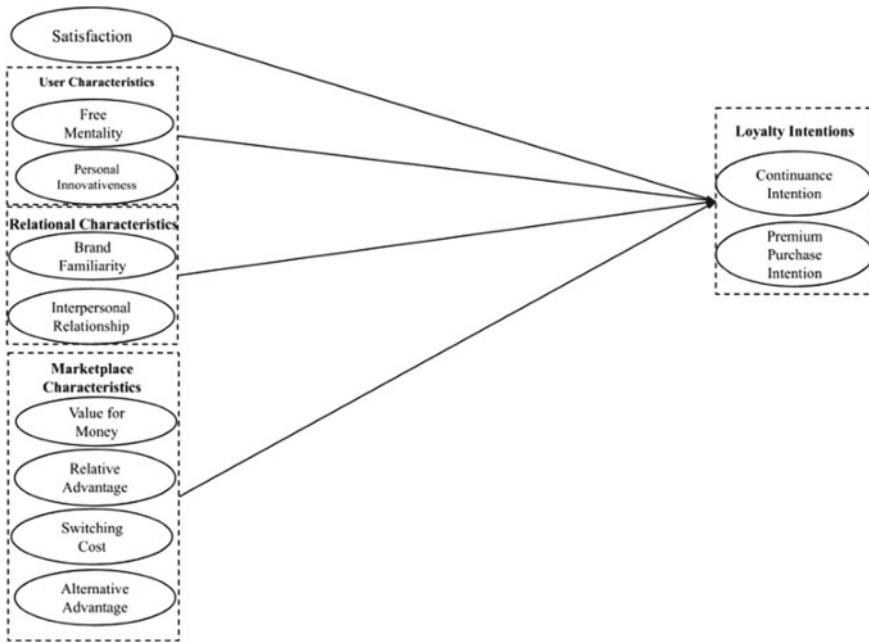
Fig. 54.1   Research model

the alternative options for user to choose. Alternative attractiveness is used to measure user alternatives among options available to be used in the marketplace [19].

- *H6*: *Value for money has a positive effect on intention to purchase*
- *H7*: *Relative advantage has a positive effect on intention to purchase*
- *H8a*: *Switching cost has a positive effect on continuance intention*
- *H8b*: *Switching cost has a positive effect on intention to purchase*
- *H9a*: *Alternative attractiveness has a negative effect on continuance intention*
- *H9b*: *Alternative attractiveness has a negative effect on intention to purchase*

This study adapted the research framework from previous study by Kim et al. [19] to understand whether the factors of satisfaction, user characteristics, relational characteristics, and marketplace characteristics have a direct effect on the loyalty intention of using freemium software (Fig. 54.1).

54.3   Methodology

This quantitative research was conducted using convenience sampling method by distributing self-administered questionnaires respondents online through various social media (LINE, WhatsApp, Twitter, and Instagram). The population of this study

are people who has adopted and use freemium music and video streaming service. To understand loyalty intentions (continuance intention and premium purchase intention) on the freemium service, the sample would be users that already have experience on using the freemium service. Freemium service used are music and video or film streaming that are common to be use in Indonesia such as iflix, HOOQ, Viu, Spotify, Joox, and Langit Musik.

The questionnaire consists of two parts, the first one is to identify the respondent's profile and demographics info, and the second one is designed to measure the attributes using the Likert scale. Each scale has six response categories ranging from strongly agree to strongly disagree. Before distributing the final questionnaire, the researchers first conducted a wording test to a total of nine (9) individuals to check respondents understanding of the words and questions of the variables. As the original questions was written in English while the research is conducted to Indonesian respondents, the original questionnaire was translated to Indonesian language and the product or the brand of each streaming services was added to complete the questions. People were the target respondents to determine whether they can understand the questions in the questionnaire. After that, a pretest with 30 respondents was conducted to ensure the reliability and validity of the measurements. At this stage, some of the indicators of the research (PI3, IR3, AA4) were found not valid with factor loading below 0.50; thus, the invalid indicators were removed on the main test analysis.

Finally, the main test stage is carried out to obtain primary data. A non-probability sampling technique was used in distributing self-administered questionnaires using convenience and judgemental sampling methods. The research has gathered 1032 respondents with 978 respondents were eligible to be processed on the main test. The main data analysis was done by using structural equation modeling with AMOS.

54.4   Result and Discussion

After ensuring all the variables and indicators are valid and reliable, i.e., all constructs have average variance extracted (AVE) value above 0.50 and composite reliability (CR) value above 0.70, measurement model test was done to check the goodness of fit of model. Out of the six model fit indices used, five of them were showing a good fit result while only one index showed a marginal fit result. The model is concluded to have a good fit, as shown in Table 54.1.

Next, we conduct the structural model test to test the hypotheses and find relationship or the effects of the independent variables on the loyalty intentions. The evaluation results are summarized in Tables 54.2 and 54.3.

For continuance intention, five of the seven variables were found to have a significant effect. Satisfaction ($t = 13.592$) affected the continuance intention the most, followed by alternative attractiveness ($t = -10.086$) and switching cost (t-value $= 8.976$). While on the direct effect on intention to purchase, value for money was

Table 54.1 Model fit test

Indices	Fit requirement	Output	Fit
GFI	Good fit: GFI $\geq$ 0.90	0.886	Marginal fit
	Marginal fit: $0.80 \leq$ GFI ≤ 0.90		
RMSEA	Good fit: RMSEA ≤ 0.08	0.049	Good fit
	Marginal fit: $0.08 \leq$ RMSEA ≤ 0.10		
NFI	Good fit: NFI ≥ 0.90	0.918	Good fit
	Marginal fit: $0.80 \leq$ NFI ≤ 0.90		
CFI	Good fit: CFI ≥ 0.90	0.941	Good fit
	Marginal fit: $0.80 \leq$ CFI ≤ 0.90		
TLI	Good fit: TLI ≥ 0.90	0.933	Good fit
	Marginal fit: $0.80 \leq$ TLI ≤ 0.90		
PGFI	Good fit: PGFI ≥ 0.50	0.745	Good fit

Table 54.2 Direct effect on continuance intention

Variables	SLF	C.R (t-value)	P	Conclusion*
Satisfaction	0.452	13.592	<0.001	**H1a**
Free mentality	0.021	0.758	0.225	H2a
Personal innovativeness	−0.011	−0.362	0.359	H3a
Brand familiarity	0.255	8.721	<0.001	**H4a**
Interpersonal relationship	0.097	3.309	<0.001	**H5a**
Switching cost	0.265	8.976	<0.001	**H8a**
Alternative attractiveness	−0.299	−10.086	<0.001	**H9a**

Notes Supported hypotheses are in bold

Table 54.3 Direct effect on intention to purchase

Variables	SLF	C.R (t-value)	P	Conclusion*
Satisfaction	0.169	5.59	<0.001	**H1b**
Free mentality	−0.207	−6.967	<0.001	**H2b**
Personal innovativeness	0.07	2.198	0.014	**H3b**
Brand familiarity	0.103	3.479	<0.001	**H4b**
Interpersonal relationship	0.192	6.124	<0.001	**H5b**
Value for money	0.343	10.995	<0.001	**H6**
Relative advantage	0.262	8.321	<0.001	**H7**
Switching cost	0.068	2.271	0.012	**H8b**
Alternative attractiveness	−0.146	−4.865	<0.001	**H9b**

Notes Supported hypotheses are in bold

found to affected the intention to purchase the most (*t*-value = 10.995) followed with relative advantage (*t*-value = 8.321*)* and free mentality *(t*-value = −6.967).

The relationship between satisfaction and continuance intentions were in accordance with previous research by Kim et al. [19], the higher the satisfaction level of the user, the more likely they would continue using the streaming service. The positive relationship between satisfaction to intention to purchase is supporting the previous study by [15] where satisfied users are likely purchase or pay for mobile application.

Free mentality relationship with continuance intention is not significant, and this is in accordance with previous research by Kim et al. [19], since freemium software offers both free and premium plan, user could use the service for free continuously, therefore their free mentality is not affecting their continuance intention, however it does negatively and significantly affect the intention to purchase. This is in accordance with previous research on free mentality where the higher degree of the free mentality affects the intention to purchase [9, 19]. The degree of personal innovativeness does not affect the continuance intention. However, it affects the intention to purchase. Innovative users are more willing to try new technology [1], the more innovative the user is, the more likely they will be intrigued to try new contents or features on the premium plan.

The variable of brand familiarity has positive relationship with both continuance intention and intention to purchase. The more familiar the user toward the service, the more likely they would continue using the service or purchase the premium plan, and this result confirms previous study on brand familiarity [10]. The interactions among user also affect continuance intention and intention to purchase significantly. After an interaction among users has created a specific group, it will exert a significant role on user loyalty intention and reduce the probability of user switching to other service [19, 28].

Value for money and relative advantage significantly affect the intention to purchase on freemium streaming service. The more valuable the service in terms of its monetary value and the perceived advantage the user would get after purchasing the premium feature, the more likely the user would pay for the premium service. This result is in accordance with previous research on value for money and relative advantage [14, 15, 19, 21]. Switching cost on this study plays a significant role on affecting the continuance intention and intention to purchase. With a high switching cost, user would be more likely to continue using the service rather than switching to another competitor [19]. Alternative attractiveness significantly and negatively affects continuance intention and intention to purchase. Alternative attractiveness plays a big role on determining customer loyalty [12]. The more attractive the alternative on the market, the more likely customer would switch to the competitors.

54.5 Conclusion and Implication

Based on the analysis of the data by using SEM technique, it can be concluded that the variable of satisfaction, brand familiarity, interpersonal relationships, switching cost, and alternative attractiveness significantly affects the continuance intention and intention to purchase. The variable of free mentality and personal innovativeness only significantly affect the intention to purchase and does not significantly affect the continuance intention. Value for money and relative advantage significantly affect the intention to purchase. Satisfaction affected continuance intention the most, while value for money is the variable that affected the intention to purchase the most.

Based on the analysis, management of the streaming service provider could implement the result of the study in accordance with the objective of their company. Whether to seek more users or to convert free users into paid users [19].

To retain their current users, streaming service provider should maintain their user's satisfaction level. Since alternative attractiveness is also a significant predictor to continuance intention, the company should create and maintain their competitive advantage to minimize the attractive alternative on the market. To convert free users into paid users, the company should create a valuable for money premium plan and to widen the gap between the free and premium feature to avoid the cannibalization effect from the free service toward the premium plan [19].

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Chapter 55
Featured Snippets Comparison in Six European Languages

Artur Strzelecki and **Paulina Rutecka**

Abstract This paper provides 743,798 keywords and results with featured snippets retrieved from the Google search engine. It presents a comparison of featured snippets displayed in six languages (English, Polish, German, Spanish, Italian, and French) in terms of snippets length, search query length, type of resulted snippet as paragraph, list, or table and top resulting domains for each country. It is found that keywords triggering featured snippets are most at two or three words long and snippets are mainly presented in the form of a paragraph. In each language, the most visible domain resulting with a direct answer was wikipedia.org.

55.1 Introduction and Research Questions

Direct answers are currently one of the most interesting answers for the search engine. They constitute an obvious continuation of work on the best match of results returned by the search engine in response to users' voice queries [1]. They allow users of mobile devices that dominate searches to receive quick responses [2]. Snippets were presented as the most important information on the search results page (SERP) in 2012. Initially, search engines presented such snippets as, e.g., knowledge graph or multimedia carousel. In 2014, a direct answer snippet, also called the featured snippet, was presented [3]. Thanks to this answer, the user does not need to browse the pages presented in SERP to get the answer to the query. Google presents a direct, selected response to a user's query in the form of a paragraph, table, or list [3]. Data for this answer are downloaded from a Web site selected by Google, the content of which is properly prepared and the domain complies with Google ranking factors.

Users search for content that interests them in various ways. This is the result of both the language they use daily, the language used for a specific search (which is

A. Strzelecki (✉) · P. Rutecka
Department of Informatics, University of Economics in Katowice, 40-287, Katowice, Poland
e-mail: artur.strzelecki@ue.katowice.pl

P. Rutecka
e-mail: paulina.rutecka@ue.katowice.pl

a foreign language for them), but also the habits resulting from joining the Internet community at various moments of the development of search engines and the Internet. In the 90s of the twentieth century, users were taught how to enter queries into a search engine to get an interesting result. They used search operators such as plus and minus to add or exclude words from searches. They also put query in quotation marks to get results containing words in perfect match. Over time, the search engine began to recognize word variations, and the approximate match matches were more relevant, which meant that users stopped using these characters, and the queries they formed were more and more resembling the natural language. Classic NLP methods, however, omit the prepositions, which defined, among others, the context of place, time, and stopwords [4]. It was not until 2019, when Google introduced the BERT technique, which analyzed the words immediately before and after the correct keyword (object).

The queries entered by different users differ in both grammatical form and length. Google analyzes a maximum of 32 words used by the user in the query, and the remaining words are ignored [5]. However, according to research conducted in English, most users enter queries consisting of two, three, or four words [6]. Queries consisting of two words are most often among those in which the subject (noun) is specified, i.e., the object to which the query relates to with the searched feature—e.g., "milk price." In queries three words long, it may already be, for example, "milk what price." Longer phrases usually reflect a grammatically correct sentence, such as "what is the price of milk."

The study is a continuation of the previous work on the subject of Google "featured snippet" (direct answer) [6]. Its purpose is to understand the structure of user queries entered into the Google search engine in response to which featured snippet will be returned. In previous studies, it is pointed out the importance of the length of the query entered in the search engine, its grammatical structure, and the domain being the source for creating a direct answer on Google. An additional goal of the article is to present the algorithm used to identify the language in the dataset, the presentation of which is a solution for researchers looking for language recognition methods in large datasets. The motivation to continue research is to deepen knowledge about direct answers, extracted from the content of the page, which is still an insufficiently researched area. This study extends the scope of previous ones to a larger number of languages and examines them in the context of previous applications based on data in English.

The following research questions are proposed in the study related to direct answers:

RQ1. What is the most used length of keywords for triggering direct answers in different languages?

RQ2. What featured snippet form are most frequently displayed depending on the language?

RQ3. Which domain are most often chosen as a featured snippet source?

55.2 Literature Review

The elementary search engine results page displays joint data of searched keywords, ranking positions, and resulted URLs. The concept of search engine visibility states that visibility of Web sites in search engines is derived from an algorithm that sorts and places Web sites according to computed ranking positions [7]. This basic concept takes into account backlinks and uses them in the same way bibliographic citation was used. The number and the quality of links are variables for the PageRank formula. Based on this formula, Web sites' positions are computed for corresponding search queries. Nowadays, Web search engines use many more different ranking factors for Web sites to compute their position on a results page.

Currently, the area of perception and influence of the search engine results page attracts more attention and can be divided into internal and external factors [8, 9]. Internal factors are domain-, Web site-, and page-related. Search engines take into account different elements found in the source code of a page such as title, headings, descriptions, content, time of last update, mobile design, and structured data for rich snippets [10, 11]. External factors are link-related [12], user action-related [13], special rules-related [14], brand-related [15], and spam-related [16]. Based on these factors, the search engine computes and displays results to the search queries [17]. Typical results are presented in the form of a list of snippets presented in the order from most relevant. It is usually ten snippets presented on one page along with additional featured snippets. Snippet contains title, URL address, and short text extracted from the Web site [18].

Recent works on snippets are on snippets quality and length. In terms of snippets quality, Lurie and Mustafaraj [19] investigated the effects of Google SERP in evaluating the credibility of online news sources. They noticed that the freshness of top stories, the knowledge graph, the panel of recent tweets, or a verified Twitter account are elements of the SERP that are used to assess the credibility of the source. Snippets present different levels of readability and language complexity; however, the readability of snippets in Google and Bing search engines is not aligned with the reading comprehension of children age 11–13 [20]. Web search snippets are subject to credibility judgments. The same short snippets provide diverse informational cues and how these cues can be interpreted differently depending on the user's background [21]. In a recent study of Zhao et al. [3], quality of Google direct answers' was evaluated. It was found that Google provided significantly higher-quality answers to person-related questions than to thing-related, event-related, and organization-related questions. Google also provided significantly higher-quality answers to where-questions than to who-, what-, and how-questions. Snippets also influence partisanship. They amplify partisanship, and this effect is robust across different types of Web pages, query topics, and partisan queries [22].

In terms of snippets length, they are investigated while measuring the gaze behavior of Web users who interact with SERPs that contain plain and rich snippets. The impact is observed of both types of snippets on the Web search experience [23]. Short snippets on mobile devices of one line are considered are perceived as

providing not much information about the result. The search performance and subjective measures are negatively affected regardless of query type. Longer snippets of five lines lead to better performance than short and medium snippets [24]. Maxwell et al. [25] tested conditions where the change in information gain from snippets was the greatest. Four different scenarios were tested with (1) title only; (2) title plus one-line snippet; (3) title plus two lines snippet; and (4) title plus four lines snippet. Search engine users better prefer longer result snippets, as they are considered to contain more information. In most cases, search engines for mobile devices present two or three lines of snippet for each result. Maxwell suggests that longer snippets provide a better search experience on desktop screens, but this may not be reflected on mobile devices due to the size of the screen. According to Kim et al. [26] users with longer snippets on mobile devices experience longer search times, whereas accuracy stays the same. This is caused by the longer reading time, more frequent scrolling with larger viewport movements, and increased time consumption for searching and reading one result. The overall findings suggest that, not like desktop users, mobile users are best served by snippets of two to three lines.

Both Google, which is currently the most used Internet search engine, as well as other Internet search engines are constantly modifying the technologies and algorithms used to make search more intuitive and to dominate the market. In response to the positioning activities carried out by Web developers, which aimed at obtaining the highest position in Google and due to trends the users form their queries, the work began on a change in the understanding of the queries entered into the search engine.

In 2013, Google introduced the revolutionary hummingbird algorithm for users' queries (August 20, 2013), which allowed the search engine to understand the intentions and the context of a query. Hummingbird was also considered a step toward conversational search and allowed the creation of a more intelligent search engine [27]. In 2015, Google confirmed the existence of RankBrain (October 26th, 2015), which is a component of the Hummingbird algorithm including machine learning [28]. Its function was to understand the users' intention while searching and to analyze users' behavior in the context of their needs. User needs can be identified in three perspectives: understanding the words of a query; evaluating page content; and evaluating the degree of matching query to the results returned [28]. By analyzing user behavior, RankBrain learned from the mistakes, matching the answer based on over 200 ranking factors including location, keywords, and site ranking, which allowed better matching of results to the search query. However, the classic NLP model used here omitted stopwords (which there are only in English 10,000), which did not allow a perfect understanding of the context of the query.

In 2018, Google, based on all previous work, introduced a new technique based on the neural network in the field of natural language processing (NLP)—Bidirectional Encoder Representations from Transformers (BERT). The presentation as a short notice was given on October 25, 2019, by Google Fellow and Vice President Pandu Nayak. BERT analyzes the words immediately before or after the keywords, including stopwords [29]. Based on the newly proposed attention and transformer

mechanism, the BERT model not only takes into account the features of character-level, word-level, and sentence-level relationships, but also takes into account relations between sentences. The BERT model first translates the input sentence into embedding vectors, and then uses a predetermined set of words, containing 30,522 tokens, which it uses to replace each element.

Besides, a positioning vector is added to each token to mark its position in the sentence. Afterward, tokens are segmented and relations between tokens are established [30]. This mechanism of the BERT model allows to set the context and understand the user's intention and return the most appropriate answer to the query. However, the question remains on how to build content on Web sites so that the algorithm can consider it to be the most adequate source for building featured snippet.

55.3 Research Method

The dataset was collected using Senuto (https://www.senuto.com). Senuto is a software-as-a-service that crawls data on Web sites' visibility from the Google search engine. Senuto retrieves data from Google daily, based on its list of queries, and saves results, along with the ranking position. Currently, it maintains a database of 20 Mio. Queries. Each query is inserted at least once per month into a Google search engine and a list of the top 50 results is returned. Depending on the language of the query, the result is returned in the same language. A dataset was acquired in September 2019. The date range of the dataset is covering the period from 1st to 15th September. The authors asked Senuto's owners to extend the crawling procedure for extracting more data from SERPs. The dataset had 743,798 crawled keywords that resulted in direct answers on SERPs. This dataset has been deposited as an open access upload at Zenodo (https://doi.org/10.5281/zenodo.3541092) and described its structure in [6].

Search queries and featured snippets were stored in many different languages. The most common languages where English and Polish. By using a function detect-language in Google Sheets, an additional parameter for each direct answer was set.

Table 55.1 Language content of direct answers in the dataset

Language	No. of direct answers	Percentage of dataset (%)
English	365,538	49.14
Polish	335,115	45.05
German	19,432	2.61
Spanish	10,090	1.36
Italian	4976	0.67
French	4799	0.65
Others	3848	0.52
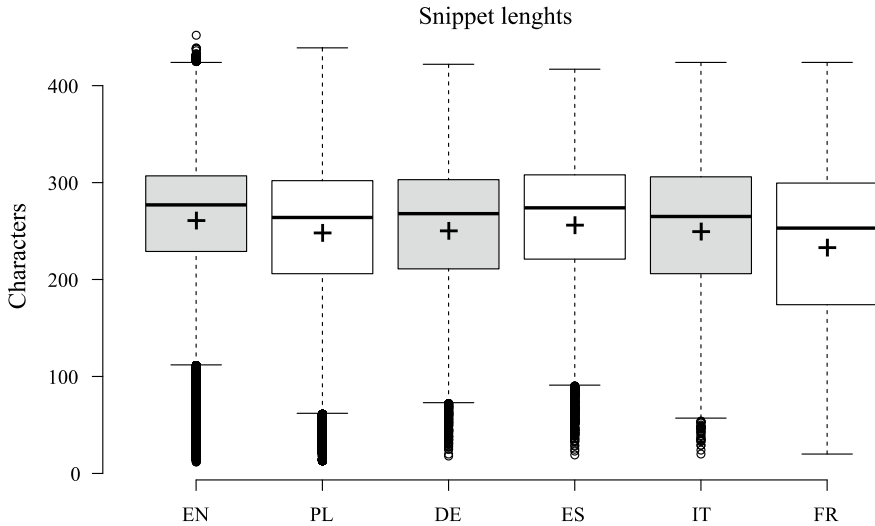
Fig. 55.1 Direct answers' snippet length comparison for the top six languages

The authors have already used data for Polish [11] and English [6] data. Detecting the language for all direct answers' content resulted in 94 different languages. The top six languages had more than 4000 results. Table 55.1 shows language distribution in the dataset. The results of the comparison of snippet lengths for the six most occurring languages (English, Polish, German, Spanish, Italian, and French) are shown in Fig. 55.1.

55.4 Results

The tables present the results of analyzing data about direct answers crawled from the Google Web search engine in six different languages. Table 55.2 shows the results of the query length analysis. Each of the keywords in a given language was divided

Table 55.2 Length of query (words) for the top six languages (values in %)

Length	1	2	3	4	5	6	7	8	9	10
English	1.10	26.73	37.21	22.15	8.52	2.73	0.98	0.38	0.14	0.06
Polish	3.18	19.66	35.81	24.68	11.53	3.53	1.11	0.33	0.11	0.04
German	6.20	50.68	29.41	9.29	3.05	0.90	0.30	0.11	0.04	0.04
Spanish	1.09	36.27	36.81	16.08	6.43	2.33	0.61	0.25	0.10	0.03
Italian	0.73	40.51	33.80	16.17	6.33	1.79	0.44	0.19	0.04	0.00
French	0.84	39.15	35.97	14.73	5.83	2.43	0.72	0.20	0.08	0.04

Table 55.3   Displayed result types for the top six languages (values in %)

Type	En	Pl	De	Es	It	Fr	Average
Paragraph	75.60	73.55	73.55	80.32	77.06	68.27	74.73
List	21.30	21.56	12.81	17.33	18.77	23.39	19.19
Table	3.10	4.89	13.64	2.35	4.17	8.32	6.08

when the space character appeared. In this way, information about the number of words appearing in each key phrase was obtained.

In the studied dataset, the most common were two-word queries for German (50.68% of keywords), Italian (40.51% of keywords), and French (39.15% of keywords), and three-word queries for English (37.21% of keywords), Polish (35.81% of keywords), and Spanish (36.81% of keywords). Less often appeared queries consisting of two in English (26.73%) and Spanish (36.72%) and three for German (29.41%), Italian (33.80%), and French (35.97%). In Polish, two-word phrases (19.66%) were less frequent than phrases consisting of four words (24.68%). In Polish, there were five-word phrases more frequently than in other languages (11.53%). The shortest key phrases were in German—two- and three-word phrases constituted 80.09% of all phrases in this language.

The results in Table 55.3 show the number of specific form types for featured snippet in the dataset. In every language, the most popular type was the paragraph (average for six languages was 74.73%), and the least popular, except German (13.64%), was table form (average for six languages was 6.08%). List form was the most popular for French (23.39%) and the least popular in German (12.81%). The average for six languages for the list was 19.19%.

Table 55.4 shows the top 10 domains in six languages with the average position of the source URL in SERP. In every language, the top domain was wikipedia.org with the average position between 1.72 and 2.11. In English, German, Spain, and French, most of the top 10 source domains referred to Q/A, dictionary or encyclopedia pages, and also to pages about health. In Polish, most of the top 10 source domains were related to health or parenting Web sites. In Italian, in addition to references to dictionaries and encyclopedias, there were also news pages. The highest average positions of source domains in SERP were recorded for Spanish (1.86), Italian (2.07), and Polish (2.13), and the lowest for English (2.32).

55.5   Discussion

Featured snippets displayed by Google allow users to get an answer for the query without visiting the source Web site, and it is one of the many solutions that Google offers to its users. Direct answers presented on the top of the search engine results page respond to the needs of the growing popularity of voice searches and it is a solution to the problem of insufficient adaptation of some Web sites to mobile devices. Direct

Table 55.4 Top 10 source domains for featured snippets with average position in six languages

Domain (en)		Domain (pl)		Domain (de)		Domain (es)		Domain (it)		Domain (fr)	
wikipedia.org	2.11	wikipedia.org	1.88	wikipedia.org	1.73	wikipedia.org	1.72	wikipedia.org	1.94	wikipedia.org	1.74
fandom.com	2.01	poradnikzdrowie.pl	2.05	dict.cc	2.08	definicion.de	1.90	treccani.it	1.98	synonymo.fr	1.09
quora.com	2.66	medonet.pl	1.73	chip.de	2.77	wordreference.com	1.86	reverso.net	1.17	reverso.net	2.64
youtube.com	2.33	parenting.pl	1.89	netdoktor.de	1.92	significados.com	1.74	wordreference.com	2.31	wordreference.com	2.62
nih.gov	1.80	infor.pl	2.05	leo.org	2.30	thefreedictionary.com	1.68	virgilio.it	1.29	linguee.fr	1.34
healthline.com	2.11	moto.pl	2.58	wiktionary.org	2.68	medlineplus.gov	2.13	my-personaltrainer.it	1.84	linternaute.fr	2.15
investopedia.com	2.19	mp.pl	1.85	focus.de	2.21	linguee.es	1.73	giallozafferano.it	1.75	larousse.fr	2.20
thefreedictionary.com	2.34	medme.pl	2.53	kfz-nummern.de	1.72	psicologiaymente.com	1.50	youmath.it	1.53	passeportsante.net	1.44
merriam–webster.com	2.84	mjakmama24.pl	2.61	t-online.de	2.77	sinonimosonline.com	2.43	corriere.it	2.87	unicaen.fr	5.44
wikihow.com	2.76	apteline.pl	2.15	lecker.de	2.22	spanishdict.com	1.93	unaparolaalgiorno.it	4.02	francaisfacile.com	1.94
Average en	2.32	Average pl	2.13	Average de	2.24	Average es	1.86	Average it	2.07	Average fr	2.26

implications for Web site owners or Webmasters about content preparation which can be used by Google to build the direct answer are highly useful. Obtaining the zero position in SERP (direct answer) is prestigious for Web creators and emphasizes the expert nature of the Web site. For future research, in-depth knowledge of trends in search engine queries and queries that trigger the featured snippet allows us to forecast changes in search engine algorithms and better understand the directions of desired changes. From the results presented, it can be concluded that there are differences in the length of key phrases used in different languages.

The shortest phrases in German can be caused by the presence of compound nouns in that language, e.g., Lebenshaltungskosten (1 word in German)—maintenance costs (2 words in English). Users are increasingly using extended key phrases containing stopwords, which, thanks to new NLP methods, return responses better suited to the context of the query. RQ1 was answered using the results of the query length analysis for each of six languages. Keywords in the analyzed dataset contained 1–10 individual words. Google is accepting 25 different words in a query, but analysis shows that keywords longer than 10 words did not generate featured snippets. The most often used length of the query was dependent on language. The answer to RQ2 is there are significant differences between the direct answer forms according to the language of the query, but ultimately for each of the six languages, the most popular type of featured snippet is a paragraph. Regarding RQ3 trends can be observed in the featured snippets sources for each language. In English, German, Spanish, and French, the most common sources are the dictionary or encyclopedia pages, while for the Polish language—pages about health or parenting.

From the presented research results, implications, and recommendations to business practice can be inferred, especially for Web site developers. To increase the probability that the content of the Web site will be used by Google as a source for creating a direct answer, authors should pay attention to the structure of the content. It is particularly advisable to distinguish key phrases consisting of 2–3 words with a short explanation in the form of a paragraph or list, which are the most commonly displayed types of direct answer. The content should be created like that presented in the encyclopedia or the form of Q/A. Important information for Web site developers is also that the page must be on the first page of the SERP for a given keyword query. There is a need to confirm whether there is a relationship between the search engine's opinion about the domain (including its history) and the use of the domain as a source for direct answer, and whether the content used for the featured snippet construct should contain references to the sources of the information provided.

In future work, we would like to research on larger datasets in other languages. We have work-in-progress on retrieving featured snippets data for three more languages: Czech, Slovak, and Swedish. We aim to collect at least tens of thousands of keywords and results with featured snippets.

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Chapter 56
Now You See Me: A Quantitative Study on the Effects of Ad Blocker Usage on Users' Brand Perception

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Valerio Stallone, Anna Rozumowski, Amelie Pelka, Dominik Reisig, and Claire Pankratz

Abstract An increasing amount of Web users is turning to ad blockers to avoid ads, which Web users perceive as annoying, an invasion of privacy, or as slackening their Web experience. Ad blocker users still encounter online advertising on their Web journey although using ad blockers. While there has been significant research into factors driving ad blocker adoption, the effects of online advertising on brand perception for ad blocker users are not well understood. To approach this white space, we conduct an online survey. We build two groups, ad blocker users and non-users. We then check for significant differences in likeability toward and perceived positive image of the brands the groups saw online ads. In our analysis, we did not find any significant difference neither in the first nor in the second variable between ad blocker users and non-users for when they see online advertising. We conclude that ad blocker users remain interesting targets for advertisers.

56.1 Introduction

The main currency in digital advertising is attention [1]. The digital advertising ecosystem contains the actors playing a crucial role in the attempt of advertisers aiming for the resource mentioned above [2]. Digital advertising has become a vital source of revenue for the supply side of the ecosystem, the publishers, who try to monetize the traffic they get on their online presences [3]. This attention-seeking behavior of the ecosystem leads to the negative perception of digital advertising by the

V. Stallone (✉) · A. Rozumowski
ZHAW School of Management and Law, Theaterstrasse 17, 8401 Winterthur, Switzerland
e-mail: valerio.stallone@zhaw.ch

V. Stallone
Maastricht University, 6200 MD Maastricht, The Netherlands

A. Pelka
Appinio GmbH, Jungfernstieg 49, 20354 Hamburg, Germany

D. Reisig · C. Pankratz
AdDefend GmbH, Borselstraße 3, 22765 Hamburg, Germany

user [4]. Numerous companies and organizations have focused on the development of systems, which thwart the display of advertisements [5]. In this paper, we will call them ad blockers.

Ad blockers remove page elements by looking for HTML, DOM, or CSS elements on the Web site and process them to be removed and are based on certain rules, which identify the spots where ads are shown [6]. The number of Internet consumers adopting ad blocking has grown worldwide over the past five years and as the Internet consumers become increasingly conscious of the possibility of ad blocking, even higher adoption rates must be expected globally [7]. Several publishers, though, have increased efforts to develop and implement mechanisms for detecting and/or counter-blocking ad blockers, which we refer to as anti-ad blockers.

Anti-ad blockers are scripts applied by Web sites to detect the presence of ad blockers on a visitors' browser [6]. The anti-ad blocker displays messages, such as warning messages, switching ads, reporting ad block statistics, restricting content on the sites using paywalls, blocking the Web sites, redirecting the users to different Web sites or content, and blocking legitimate content on the Web sites [8]. The application of anti-ad blockers on the supply side of the digital advertising ecosystem—the publishers—means that Internet users, although having installed an ad blocker, might see online ads [8, 9].

Although intrusive advertising can temporarily increase the click-through rate [10], it can negatively affect brand perception, leading to ad avoidance [11]. This negative effect can be even more significant for those ads users might not expect to see. The effect of these intrusive ads—being intrusive because shown although the Web site visitor is using an ad blocker—may have on brand perception and on perceived ad annoyance is lacking in academic literature.

This research contributes to the literature on online consumer behavior by highlighting the effects on brand perception of showing a brand's online ad to an ad blocker user. The authors will do so by analyzing a dataset from a German online survey and showing how the self-reported likeability and the perceived positive image of a brand change when confronted with an online ad although using an ad blocker. We will contribute a starting point for studies on brand perception for the subgroup of ad blocker users, which is new to academia.

56.2   Literature Review

This review investigates the two aspects of ad annoyance and ad blockers in academic literature. We selected articles from two bibliographic databases (IEEE Xplore and Google Scholar). We considered peer-reviewed journals, conference proceedings, and theses based on their knowledge validity and their highest impact on the research field. We used the simple denominations as keywords for the research. Each of the selected articles is required to contain one of the following denominations least in the abstract. The search of articles took place between September and October 2019 and June and July 2020 and was limited to English-speaking journals.
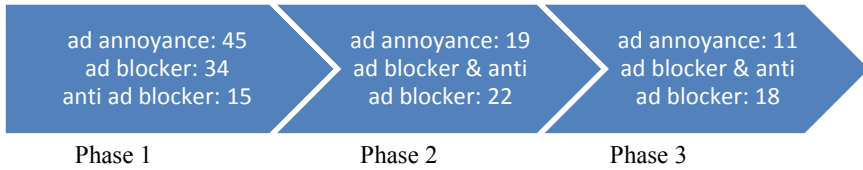
Fig. 56.1 Literature review

1. *ad annoyance*
2. *ad blocker*
3. *adblocker*
4. *anti ad blocker*
5. *anti adblocker*

In a second step, we narrowed down the research for the second and third keywords by combining them and therefore only consider papers mentioning both *ad blocker* and *anti ad blocker*.

6. *ad blocker* AND *anti ad blocker*
7. *ad blocker* AND *anti adblocker*
8. *adblocker* AND *anti ad blocker*
9. *adblocker* AND *anti adblocker*

This way we were able to ensure a more focused selection of papers, which are listed in the next chapters. Figure 56.1 shows the number of papers found for each phase the authors went through.

In phase 1, we collected all papers found in the research; in the second phase, the authors sorted out theses, reports, and similar; and in the third paper, the amount of papers was reduced thanks to an in-depth analysis of the content by sorting out papers and conference proceedings contributions showing an evident irrelevant focus for our contribution.

56.2.1   Ad Annoyance

Studies on ad annoyance and ad avoidance started way before the digital age. In 1968, researchers found that people usually approved of the role advertising played in society that advertising was essential, that advertising raised their standard of living, and that advertising resulted in better products for the public [12].

According to [4], digital advertising has become intrusive. Advertising intrusiveness is a cognitive process in which users perceive ads in a media vehicle to be distracting [13]. The perception of advertising intrusiveness tends to evoke negative emotional reactions, such as annoyance. In a Web context, this means avoidance of the site [14]. Annoyance can arise out of advertising repetition [15] which is usually self-reported by the users [16].

Audience attitudes toward ads can be influenced by the following factors: the *presence of an ad itself, the product category of an ad, the perception that an ad is intrusive and/or irritating [17] and/or irrelevant [18]. Not all users hate online ads, and a minority of them enjoys even the most intrusive ads [19], so it comes back to what [12] wrote back in 1968. Hence, ad annoyance might not even cause significant damage to the perceived Web site usefulness of the publisher [20].

56.2.2 Ad Blocker and Anti-ad Blocker

Scholars in the technological field of literature on ad blockers aim at developing either new ad blocking or anti-ad blocking solutions [21–25]. This field focuses on the implementation and application of such solutions and highlights the difficulties of such a pursuit. Some of them might even go further and discuss the development and implementation of anti-ad block killers, functionalities on users' site to deactivate anti-ad blocking functions [23, 25]. In the legal field, academic literature looks at the implications of using ad blocker from the perspective of the publisher as an affected actor of the digital advertising ecosystem [6, 26–29]. Guptha and Panda [6] suggest to consider the implications GDPR might have on a publisher applying anti-ad blocker. Economic analyses show models on how the usage of ad blockers is affecting the players involved [6, 30–33]. For the purposes of this paper, only the behavioral field will be of interest.

Researches in the behavioral field dive into the identification of factors influencing the usage of ad blockers. The most important factors leading the use of ad blocker are the needs for security/privacy, for avoiding further interruption online, and for page loading speed [3, 14, 34–36].

56.3 Hypotheses Building

Whenever publishers apply anti-ad blocker, users might see online advertising even if they are using an ad blocker. In these cases, seeing an ad alters the users' perception of the Web site, which is showing the ad, negatively. Hereby the question, how the users' perception of the ad's brand will change, arises. The first hypothesis we define checks for the attitude of the user toward the brand itself and therefore, to the likeability toward the ad's brand.

H1 *Seeing an online ad, although using an ad blocking solutions leads to a change in likeability toward the ad's brand.*

The second hypothesis we build highlights the opinion of the user concerning the perceived image of the brand by the market.

H2 *Seeing an online ad, although using an ad blocking solutions leads to a change in brand perception.*
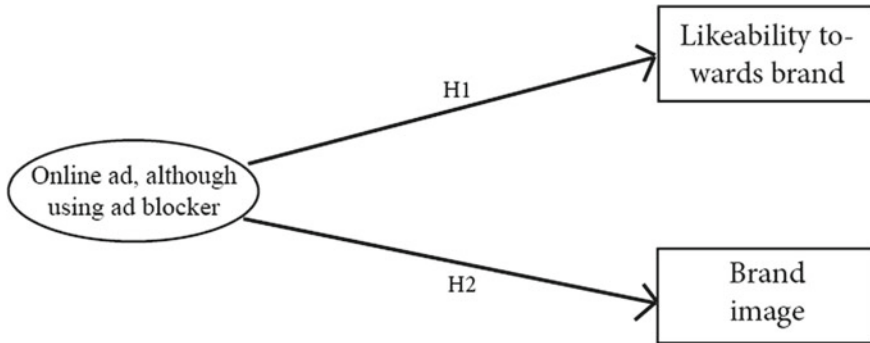
Fig. 56.2 Hypotheses building

Figure 56.2 depicts the underlying assumption about the relationships between the fact of seeing an advertisement and the likeability of the user toward the brand as well as the same fact and the alteration of the brand perception by the user.

56.4   Research Method

56.4.1   Data Collection

AdDefend designed a questionnaire, and Appinio distributed the final questionnaire online to the Appinio panel members and managed the collection, monitoring, and processing of the data.

AdDefend is an independent platform for ad block advertising that displays ads to users of ad blockers. That way, publishers remonetize their content with ads, advertisers have the opportunity to address this target group, and users keep free access to their favorite content.

Appinio is a German market research company. Appinio collects thousands of answers globally from specific consumer groups to validate decisions and ideas in minutes.

Appinio collected the data with an online questionnaire targeted for Internet users from Germany. AdDefend gave Appinio the task of acquiring at least 1500 valid responses, and therefore, the survey was sent to as many panelists up until the number was reached. In the end, the survey resulted in 1511 valid responses. The questionnaire contained 22 questions about their Internet consumption on desktop devices. During the second half of December 2018, we conducted the survey to be sure to have a high density of ads shown to the participants due to the Christmas-related advertisement. 1761 panelists completed the questionnaire. 250 subjects were invalidated for having inconsistently and/or incompletely responded to the questions.

56.4.2   Variables

We defined two latent variables because they referred to relatively complex phenomena. We measured all of them using items adapted from previous studies—namely pleasure induced by online advertising [37] and perceived credibility of online advertising [38]. We, therefore, focused on the likeability toward, and on the positive image of three different German brands: We chose a telecommunication company and two fashion brands. The items were rated on a four-point Likert scale (from 1 = completely disagree to 4 = completely agree). We used one item each and asked "How likeable do you find the brand?" and "To what extent do you agree: The advertising I have seen gives the brand a more positive image" only to those panelists, who explicitly mentioned that they saw an online advertising of one of those three German brands. 43% of the respondents said they saw an ad of the telecommunication company, 32%, said they saw an ad of the first fashion brand and 29% of the second fashion brand. We did not control for those users who might have seen an ad but do not recall it. The independent variable was quite simple, having been measured through direct questions to the participants. Current users of ad blockers were coded 1 for those participants who were using ad blockers at the moment, and 0 otherwise.

56.5   Results

56.5.1   Descriptive Results

The final sample consisted of 1511 subjects (56% males and 44% females), with the following age distribution: 13% under 18 yr of age, 34% aged between 18 and 24, 28% aged between 25 and 34, 15% aged between 35 and 44, and 9% above 45. Almost 48% of respondents told us to consume Internet content multiple hours a day, 16% one hour a day, 16% multiple hours per week, and almost 20% less than the above. Regarding ad blocker usage, 50% of the subjects were current users, and 50% of the subjects were not current users. 75% of the panelists answered the question, whether they saw an online ad lately with a positive and the 25% with a negative response.

56.5.2   Differences in Brand Perception

We conducted *t*-tests to explore any significant differences in likeability toward or positive image of three different German brands between the two groups of respondents. We did not detect any significant results, which we show in Table 56.1.

Table 56.1 Brand perception and ad blocker usage

	Ad blocker usage				Diff
	Yes		No		
Likeability	Mean	SD	Mean	SD	Sign. 2-s
Brand 1	2.75	0.823	2.83	0.823	0.301
Brand 2	2.81	0.779	2.92	0.784	0.124
Brand 3	2.62	0.905	2.59	0.891	0.708
Image	Mean	SD	Mean	SD	
Brand 1	2.59	0.869	2.65	0.790	0.278
Brand 2	2.67	0.815	2.74	0.799	0.329
Brand 3	2.59	0.860	2.54	0.856	0.404

Due to these results, we are not able to find significance to support neither H1 nor H2: We cannot say that seeing an ad although using an ad blocking solution leads to lower likeability to the ad's brand or to thinking the brand has a less positive image in the market.

56.6 Discussion

56.6.1 The Role of Ad Blocker Usage

This study provides a first attempt on the analysis of the effect of ad blocker usage on brand perception. We did not find any significance in these effects and were surprised by it.

This has big implications for advertisers and other elements of the digital advertising ecosystem. Apparently, German ad blocker users did not think worse about the brand showing the online ad than non-ad blocker users. From the companies' perspective, this raises some questions: How does it change the perception of the advertised brand in the end? Which advertising content should be used? A company like AdDefend is keen to get more insights into this situation. For now, this research shows an opportunity for advertisers: Placements given by the publishers' use of anti-ad blockers open up a new way to reach for the main currency of digital advertising: attention.

56.6.2 Limitations

The biggest limitation of our study relates to the use of self-reported, rather than observational data. The data so collected might contain inaccurate/misleading information that the interviewees would have reported intentionally/inadvertently. Some interviewees might have reported to be users of ad blockers, but in reality, they might be wrong after having installed other types of plug-ins/programs/applications. In turn, other interviewees might have reported to be non-users, but they might have installed an ad blocker unconsciously or forgotten they had installed it intentionally. Their answers concerning their memory of "lately seeing an ad of a certain brand" might be criticized. Hence, the use of observational data in future research would provide a more accurate representation of the phenomenon under consideration.

We only checked for the German market with a significant amount of panelists, though non-representative concerning the age distribution. Hence, the analysis of a representative participant group would provide a more accurate portrayal. An analysis of a different market would also highlight cultural differences in the usage of ad blockers and the attitude toward online advertising.

This study has the obvious limitation of using cross section, rather than longitudinal, data. Cross-sectional data provides a simplified static representation of reality and may not reflect important aspects. A weakness of this study is not having measured dynamically how the actions of advertising stakeholders may improve/worsen the brand perception of an ad's brand for ad blocker users over time.

56.7 Conclusion

This exploratory study has implications for both practitioners and for future research. Given the foreseeable evolution and managerial implications of this phenomenon, it is becoming increasingly important to investigate more deeply how and whether ad blocker users are still willing to see ads and how these ads should look like. The industry, as well as academia, is interested in researching which kind of advertising content would respect the expectations of ad blocker users as well as research on the counter activities against anti-ad blockers, such as so-called anti-ad block killers and the implications of online advertising targeting although using an ad blocker in respect of GDPR regulations.

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Chapter 57
Electronic Shopping Experience for Luxury Brands: A Factorial Analysis

Nuno Martins, Sandrina Francisca Teixeira, José Luís Reis, and Ana Torres

Abstract This research provides an overview of the online consumer experience of luxury brands in Portugal. The purpose of this study was to identify the significant factors that represent customers' perceptions of the online shopping experience for luxury products. Using a quantitative approach, the authors conducted an online survey. 327 usable responses were obtained. Descriptive and factorial statistical analyzes were used to provide the empirical findings. This study proposes and empirically tests a model of the factorial structure of the online shopping experience for luxury goods. We found an eight-factor dimension structure that proposes the main contributors to understand the factors that represent consumer perceptions about buying luxury products online. The findings suggest that the eight ranked significant factors that represent the customer's perception of the online luxury shopping experience are in this order: e-buying experience, e-loyalty, e-risk, e-satisfaction, luxury value, luxury useless, luxury future buy, and e-buying influence. The work provides empirical evidence that the eight significant factors represent the customer's perception of the luxury shopping experience online, that help to understand how luxury brands should be managed online in order to enhance customer e-buying experience, e-satisfaction, e-loyalty, and luxury value proposition. This study provides

N. Martins · S. F. Teixeira · J. L. Reis (✉) · A. Torres
Research Unit CEOS.PP/ISCAP/P.PORTO, ISCAP, Porto Superior Institute of Accounting and Administration, Matosinhos, Portugal
e-mail: jreis@ismai.pt

N. Martins
e-mail: n.reismartins@gmail.com

S. F. Teixeira
e-mail: sandrina@iscap.ipp.pt

A. Torres
e-mail: ana.torres.1806@gmail.com

J. L. Reis
Research Unit CEDTUR/CETRAD, ISMAI, Maia Institute University, Maia, Portugal

A. Torres
INESC TEC/LIAAD, Porto, Portugal

709

several contributions for online luxury brand managers and some directions for further research.

57.1 Introduction

The unique character of luxury is reinforced by the emotions evoked in the shopping experience [1], which allow to differentiate luxury brands from essentially functional characteristics [2]. Luxury products have a value that goes beyond their usefulness, quality, scarcity, and value, is beyond the object, and is in the perception and emotion from who desire and buy it.

There is no consensus on whether luxury brands should be sold online, given the apparent paradoxes between the attributes associated with a luxury brand and the characteristics of an online sale. The challenge that luxury brands face in combining the difficult relationship between the characteristics of the Internet in general, and e-commerce, with the exclusivity associated with luxury brands is notorious. However, the current market scenario has started to modify the negative implications related to the luxury in the online. And now, the online channel represents 25% of global market value, with 100% of luxury purchases digitally enabled.

The luxury sector powered through geopolitical turbulence and recession fears in 2019. The overall luxury market—encompassing both luxury goods and experiences—grew by 4% at constant exchange rates in 2019 to an estimated €1.3 trillion globally. The market for personal luxury goods—the "core of the core" in luxury segments, and the focus of this analysis—reached a record high of €281 billion, representing 4% growth. Globally, online continued to gain share and now accounts for 12% of the market, with customers increasingly influenced and enabled by digital channels, including in their physical purchases. Globally, 75% of luxury transactions were influenced by the online channel, and 20–25% of purchases were digitally enabled [3].

Considering this growing interest in the use of e-commerce for purchase luxury brands, this study intends to identify the significant factors which represent customer's perceptions of online buying experience of luxury goods.

57.2 Background

Luxury: The definition of the concept of luxury itself is very complex and much associated with a specific context, and it is even common for a person's opinion to be ambivalent and varied [4]. One of the great difficulties in the study of the luxury market is precisely a clear definition of what luxury goods are, what is the difference in relation to common goods or even in relation to the so-called premium or top-of-the-line products, which are only improved versions of common products [1]. Luxury is a concept that is constantly changing, and there are countless authors

who approach and define this concept differently. For [5] in the light of the economy, luxury refers to products whose quality/price ratio is higher than the general market. However, the author believes that this perspective is reductive and does not show the difference between a high-end product and a luxury product. In addition, other authors believe that luxury goods are acquired for what they symbolize, which is thought to be related to different personal perceptions—hedonic consumption and personality models [5]. More recently [6] claims that in the past, luxury was a sign of status, wealth, and power, however, nowadays luxury serves a lot of plus personal interests—the desire to own and use luxury. The same authors believe that the fact that luxury is the object of so much desire has led business models to evolve, and it is now possible to rent luxury solely to satisfy the desire to be able to use it [6].

Luxury levels: In view of the various epistemological difficulties, it is crucial to define and analyze luxury based on the consumers' perceptions of it [7]. According to [8], luxury consists of three levels: inaccessible luxury, intermediate luxury, and affordable luxury, constituting the way the brand is marketed. Affordable luxury refers to all products that, due to some of their characteristics, are luxury, but that are produced in large quantities. Due to this characteristic of production, they tend to have a better quality/price ratio. At this level, communication is made under the brand, with the particularity of being more comprehensive and broader, for examples, beauty and cosmetic products. Intermediate luxury—the characteristics of this level of luxury are close to the inaccessible level of luxury, and this typology is associated with limited series and capsule collections. Through this feature, these products guarantee the selective and exclusive standard assigned by the brand. The communication of this type of products is very selective, and the consumer is already aware of the status and quality of the brand, for example, accessories, such as pens and cufflinks. Inaccessible luxury—this level of luxury comprises all brands whose products are more expensive, rare, and exclusive. These brands communicate in a discreet and non-mass manner, for example, works of art and yachts. Thus, this study will focus on optics of accessible luxury for the sake of accessibility and sample size.

Online luxury market: Knowing that globalization is a widespread concept, managers recognize the need to be everywhere, on any day, at any time. The constant and growing evolution of the market, coupled with the fast pace at which people live their daily lives, makes them increasingly change their buying behavior from traditional to online commerce.

E-commerce: Makes it possible for companies to respond more flexibly and dynamically to market opportunities, by moving from a system of scale and operations to an individualized marketing system, based on customer relations [9]. However, for companies, as with any strategic definition, it is important to understand market needs when it comes to using this distribution channel. Only this understanding will allow an effective performance that will lead to greater growth in the channel [10].

According to the Luxury Goods Worldwide Market Study, Spring 2019, the online channel, in 2019, represents 25% of global market value, with 100% of luxury purchases digitally enabled [11], thus denoting a trend of migration from this

channel to e-commerce, thus giving more guarantees that the effort and investment in strategies and e-commerce platforms you will be easily rewarded in sales.

According to the report Eight Themes That Are Rewriting the Future of Luxury Goods [12] overall, the luxury market grew by 4% in 2019, to an estimated €1.3 trillion globally, with positive performance across most segments.

E-shopping experience: The online shopping experience refers to the process of purchasing products or services over the Internet [13]. According to Tauber, experiences are an important part of consumption and purchase, with buyers not only intending to buy products, but also to enjoy shopping. The shopping experience must interact with several of the customer's skills to satisfy and create value, while the customer interacts with the organization, products, and possibly other customers. From the consumer's point of view, the experience can be conditioned by numerous factors, be it the Web site layout, the product presentation, among others, all of which can be controlled and altered by the company in order to meet the customer's needs and thus retain customer loyalty [14].

According to [15], Web site quality, reputation, and E-WOM (Internet word of mouth) are the dimensions of trust which help in developing consumer's trust toward online shopping. This reinforces the concept of "flow," meaning that when customers experience a flow during their online navigation on the company Web site, they pay little attention to anything else, such as the passing of time [16].

If compared to traditional commerce, e-commerce is much more efficient about some of the needs of consumers. It allows consumers to easily obtain knowledge about the quality, availability, specifications, and prices of the brand's products, always with the possibility of comparing them with other brands that are also present online. Thus, e-commerce allows consumers to make smarter purchasing decisions in a way that is not possible through traditional purchases [17]. Several authors point to convenience as a key factor for the migration of the traditional channel. So, the reason why most shoppers like to shop online is high accessibility and great convenience [18]. The validation of the e-commerce option by luxury brands also depends on determining the extent to which the digital experience is compatible with the sensitive nature of luxury products and with the theatrical nature of commercial spaces and the communication of luxury brands [19].

Customer satisfaction: By definition, customer satisfaction is the extent to which consumers feel satisfied after an experience of buying goods or services [20]. Customers always aim to obtain maximum satisfaction from the products or services they buy, and that satisfaction can be determined by subjective needs (customer needs, emotions) and objective factors (product and service characteristics) [21].

Some authors, such as [22], believe that customers' satisfaction is heavily influenced by the expectations, which are related to three aspects: their experience with the retailer, the retailer's reputation, and their belief in the retailer's future offerings. Expectations will serve as cognitive guides for customers to reduce uncertainty in purchasing, in the present investigation, treated as e-satisfaction, considering only situations of purchase in an online environment. Customers' satisfaction and loyalty are positively related to the company's profitability and respective market share [14], as soon as customer loyalty is achieved, they are even willing to pay more for the

product, since they identify unique values in the brand that enhance confidence in it [23]. Customers' loyalty is reflected in a combination of attitudes (purchase intention, willingness to recommend the brand to others, etc.) and commitment to the company demonstrated by a resistance to change to a competitor [24].

E-loyalty: The importance of consumer loyalty for online shopping is increasingly recognized as an important factor as the number of online consumers increases [25]. Conquering new consumers is expensive, and it is relatively cheaper to maintain existing ones, especially when the latter are satisfied with the brand, or even like it [26]. It is therefore crucial that companies understand how they can retain their customers and retain those who are already loyal.

Customer loyalty does not equate to customer satisfaction. The consumer may not become loyal for reasons that are alien to the brand, such as financial situation, time constraints, risk perceptions, among others [27]. Satisfaction is a necessary criterion, but not enough to keep customers. We know that "very satisfied" and "satisfied" customers sometimes switch to competitors [28]. Thus, customer loyalty, which is made up of a number of qualities, is driven by two factors: satisfaction that comes from previous experiences with a certain brand and the trust generated by those same experiences. On the other hand, it also includes a commitment on the part of the client to make a sustained investment in a continuous relationship with that brand or company.

E-perception of risk and benefit, in the present investigation, treated as e-risk: Web-based services and/or online services offer customers a range of benefits, such as advanced control, ease of use, and reduced transaction charges [29], however it is crucial that the consumer realizes these issues, thus reducing the perception of risk inherent in purchases through e-commerce. One factor that influences the adoption of e-commerce is related to the perception of risk by the consumer. The company's cultural and institutional structure and the risks related to the lack of regulation are an impediment for many companies. Payment fraud or consumer distrust are just some of the critical points related to e-commerce [31]. The perceived risk is an important barrier for all consumers who intend to make an online purchase. Since the concept of perceived risk began to be addressed by marketing that several types of risk have been identified, it is possible to consider that the perceived risk is everything that the consumer considers to be uncertain in online transactions [32]. Perceived risk is something that continues to influence consumers in their online shopping intentions. It is very common for a customer, who is making an online purchase, to be reluctant to make it since the feeling of risk is too great compared to that felt through traditional commerce [33]. The fact that consumers can enter a certain store and touch, feel, and even try the product before deciding whether to buy it immediately reduces the level of perceived risk.

The concept of perceived benefit, although contrary to the concept of perceived risk, also affects the way the consumer views a brand and its products. In the case of e-commerce, the perceived benefit concerns the advantages that the consumer identifies in the service and the value that he attributes to it. Consumers report that they buy online because they identify benefits such as greater convenience, discounts, time savings, greater variety of products compared to traditional commerce [34]. Thus,

contrary to what is verified with the perception of risk, the perception of benefit is a huge enhancer of the shopping experience and consequent intention to buy.

On a wider perspective, some authors have investigated the concept of "Brand consciousness" which is when a consumer is willing to buy well-known brands [35] goes on to identify that these consumers benefit from acquiring these brands as it gives them a certain self-image and social acceptance. This said, the same authors refer that brand-conscious consumers tend to prefer luxury brand, which makes them less price sensitive and willing to spend more at each time.

Only in the presence of trust can brands establish long-term partnerships and guidance [36] foster cooperation and the desire to remain in the relationship [37], reduce conflict, and increase satisfaction [38]. Trust is thus a very important factor in the relationship with the brands, either before the purchase intention or after the purchase act itself.

57.3 Method and Results

57.3.1 The Variables, Measures, and Inquiry Process

For several constructs in our research model, we derived measures from extant literature (as we described previously), adapting them to suit the context of our study. Each factor was measured with multiple items (see Table 57.2) and scales of five-point Likert were utilized to design our questionnaire. Measuring items used in this study were adapted mainly from existing scales that previous research has shown to be reliable and valid [39] and includes 45 items related to online shopping behavior. Finally, a single item-scale was used to measure each of the demographic variables (e.g., age, genre, education level, and occupation), online shopping, and luxury goods buying experience.

The inquiry process was conducted a pilot study to examine both construct face validity and content validity. We invited a total of 10 frequent consumers of luxury goods, to evaluate each item with respect to wording, fit with construct, completeness, and based on these pretest results, a more detailed concept definition of "luxury consumption" was provided and several minor changes in wording were made to better adjust the construct definition.

Data was collected from a convenience sample of online consumers. An online questionnaire survey was conducted via Google Forms providing a link to the questionnaire by e-mail and Facebook/Facebook Messenger. Only individuals who have online shopping experience were selected as the respondents of our survey. As such, out of 402 returned surveys, a total of 327 questionnaires were completed and determined to be usable for further analysis. Among those, only 75 individuals have purchased luxury goods.

Table 57.1 Sample principal characteristics

Demographic	Characteristics	%	Online shopping	Characteristics	%
Gender	Males	41	No. purchases (a year)	1–5	30.3
	Females	59		6–10	20.9
Age	18–24	9.7		11–15	11.9
	25–34	56.5		≥16	17.7
	35–44	12.4			
	45–54	10.9	Frequency	Monthly	21.2
	55–64	5.7		Quarterly	40.5
	≥65	3.5		Every 6 months	19.7
Education	A'Levels	19.1			
	University degree	80.9			
Profession	Employees	61.2	Amount (Euros)	<30	19.9
	Self-employed	16.9		30–99	46.8
	Student	9.5		100–299	11.7
	Retired Unemployed Others	6.5 4.7 1.2		≥300	4.0
Residence	Lisbon and Tejo Valley	10.2	Luxury goods consumers		18.7
	North Center	86.0 3.8			

57.3.2 Sample Characteristics

As shown in Table 57.1, among respondents, 59% were female and 41% were male. The vast majority (56.5%) was between 25–34 yr, 80.9% had a university degree and, being employees (61%) and self-employed individuals (16.9%), residing in urban centers, in its majority in the north of the country (86%).

57.4 Factorial Analysis Results

57.4.1 Analysis

Factorial analysis (using SPSS principal components method) applied to the 45 initial variables representing customer perceptions of online buying experience of luxury goods was used to examine the dimensionality of the scale. After a Varimax rotation for a clearer interpretation of the components, the results allow to identify the following ranked 8 significant factors, extracted by a decreasing quantity of explained

variance and eigenvalues ≥1 criteria (Kaiser 1951): e-buying experience (9 items), e-loyalty (6 items), e-risk (5 items), e-satisfaction (4 items), luxury value (4 items), luxury useless (3 items), luxury future buy (3 items), and e-buying influence (2 items). We use a 0.5 cutoff value for loading scores [39, 40] to identify the component. Following this criteria, 9 variables with loadings <0.5 were removed from the analysis.

A second analysis shows the eight ranked significant factors accounted for 67.7% of total variance. As a second check, we examined the items amputation has resulted in a better fit of scale structure, as the reliability measures (alpha Cronbach) were improved, and the increase of the total explained variance (from 61 to 68%) allows to accept the eight-component structure. The results of Varimax rotated factors, the component items loadings, and reliability measure (α Cronbach) of each factor are presented in Table 57.2. The contribution of each item for factor construction shown that all factor loadings are in the recommended value (>0.5), ranged from 0.62 to 0.88 [39]. The α Cronbach of each construct ranging from .92 to .77 is above the recommended value (>0.7) indicating a satisfactory internal convergence and reliability of measures, except for "luxury future buy" (α, .630).

Globally, the results of Kaiser–Meyer–Olkin Measure of Sampling Adequacy (KMO) and the significant value of Bartlett's test demonstrate the data are adequate to factorial reduction (Sharma 1996).

57.4.2 Discussion

This study proposes and tests empirically a factor structure model of online buying experience of luxury goods. We find an eight-factor dimension structure which proposes the major contributors to understand the factors representing the consumer's perceptions of online buying luxury goods.

According the results, the dimensions e-buying experience, e-loyalty, e-risk, e-satisfaction, luxury value, luxury useless, luxury future buy, and e-buying influence are, in this order, the significant factors which represent customer's perceptions of online buying experience of luxury goods. Following we discuss the factorial analysis results of each.

E-buying experience—the first ranked factor accounting for the highest explained variance (20,319%) permits to conclude that online consumers tend to be more satisfied with contents related to whole online purchasing process. E-buying experience is strongly correlated with easiness to compare products' characteristics, diversity of brands and greater information availability, competitive prices, easy and convenient delivery, payment security, and a pleasant way of buying. Noticeably, in previous studies, most of these elements are related to convenience with online shopping frequently linked with fast and easy way of buying [41, 42].

E-loyalty—explains that the second highest variance in data (11.444%) is strongly associated with ongoing purchase intentions from the same e-store, whenever customers have positive online buying experiences. Consequently, customers intend

Table 57.2 Factor analysis results

Factor	Survey item	Loading	Variance%	α
E-buying experience (9 items)	1—Easiness to compare	0.786	20.319	.893
	2—Greater information availability	0.759		
	3—Competitive prices	0.752		
	4—Easy and convenient delivery	0.748		
	5—Easy online store navigation	0.733		
	6—Increased product diversity	0.724		
	7—Objectivity of purchase	0.694		
	8—Easy and secure payments	0.680		
	9—Lack of physical barriers	0.627		
E-loyalty/E-Wom (6 items)	10—When I have a positive experience on e-store I give third parties positive WOM about how well it works	0.865	11.444	.916
	11—When asked I recommend the online store to third parties	0.862		
	12—Whenever I have a positive experience in online shopping, I return to the same e-store to make other purchases	0.827		
	13—I will visit the same online store to buy the same goods	0.813		
	14—I will continuously use the same online store to search for and buy my goods/services	0.776		
	15—Whenever I have a positive experience in online shopping, I intend to provide positive feedback	0.759		
E-risk perception (5 items)	16—I consider it risky to purchase online	0.869	10.262	.883
	17—I am afraid to shop online	0.864		
	18—For me it is scary to shop online	0.792		
	19—I believe that making online purchases is not a reliable action	0.789		
	20—For me making an online purchase is no guarantee of success	0.726		
E-satisfaction (4 items)	I think buying online is: 21—an interesting process	0.837	8.532	.906

(continued)

Table 57.2 (continued)

Factor	Survey item	Loading	Variance%	α
	22—a good experience	0.829		
	23—a fun action	0.823		
	24—enjoyable	0.802		
Luxury value (4 items)	25—A luxury product cannot be sold in the supermarket	0.834	4.962	.774
	26—Real luxury products cannot be mass-produced (are exclusive goods)	0.822		
	27—I prefer to evaluate the attributes and performance of a luxury brand, then listen to the opinion of others	0.649		
	28—I don't think a luxury product depreciates over time	0.639		
Luxury useless (3 items)	29—I think luxury is just ostentatious	0.872	4.773	.820
	30—I think luxury is useless	0.864		
	31—I think luxury is old-fashioned	0.753		
Luxury future buy (3 items)	32—I think I will buy more luxury products in the future	0.751	3.845	.630
	33—I think in a resale situation, a luxury product can be more valuable in future	0.680		
	34—I think that a luxury brand with high prices is synonymous with higher quality compared to other brands	0.635		
E-buying influence (2 items)	35—Third-party recommendations are important to my online purchase decision making	0.883	3.547	.860
	36—I am influenced by third-party experiences with online shopping	0.878		

Note Method: Varimax rotation. Loadings are all significant at .05 level. Total variance 67,682%, KMO 0,827 and Bartlett's test (*p*-value) 1311,105 (0.000)

to provide positive feedback and recommendation of the online store to third parties. This finding is in line with a great extent of research in marketing and e-commerce fields, which found e-loyalty as a positive outcome of consumer satisfactory buying experiences. Moreover, in such competitive e-marketplaces, a loyal customer-base is vital for the success and survival of online retailers.

E-risk, accounting for 10.262% of the total explained variance, is closely associated with stress or anxiety on e-consumers caused by online shopping (e.g., risky, scary, not reliable, or no guarantee of success when buying online). This finding is consensual with several researches which point out risks related to security with online payments, shipping and delivery problems, merchandise guarantees, e-trust, and retailer reputation or trustworthy. Concerning the luxury goods online shopping, the consumers' e-risk perceptions are likely to have a great importance on consumers buying decisions.

E-satisfaction explains 8.532% of the total variance and is strongly related with online buying being an interesting process, fun and pleasant experience. This result is in line with prior studies [41, 43] which find e-satisfaction of paramount importance and being a strong predictor of customer future behavior, e.g., e-loyalty, e-WOM, and site recommendation.

Luxury value, accounting for 4.962% of the total variance explained, relates luxury products being exclusive goods which cannot be mass-produced or distributed and having an increased future value (e.g., "I don't think a luxury product depreciates over time"). This result is also in line with affordable luxury characteristic of demand for quality (e.g., based on a better quality/price ratio). Besides, luxury value shapes customers' perceptions of product value and would likely to improve customer future buying intentions.

Luxury useless explains 4.773% of the total variance and is strongly correlated with consumer's negative perceptions of luxury (e.g., luxury is just ostentatious, useless, and old-fashioned). When related to the luxury value factor, this factor dimension opposites the consumers with different luxury product connotations—useless or dated versus quality value.

Luxury future buy, explaining 3.845% of the total variance, is related to consumer's buying intentions for more luxury products in future. This finding is likely to be supported by the consumers' perception of better quality of luxury products and its future value, in the case of a resale situation. As such, investments in luxury products, such as art and jewelleries, could generate increased turnovers and futures returns, in the long run.

E-buying influence explains 3.547% of the total variance and despite, being represented by only two items, the highly significant correlations and Cronbach alpha (.86) are large enough to support the stronger contributions of the items for the factor construction, e.g., "Third-party recommendations are important to my online purchase decision making" (.883) and "I am influenced by third-party experiences with online shopping" (.878). This finding highlights the importance of truthful and unbiased peer-to-peer information for consumers when relying on recommendations to make wise buying decisions. This becomes more important, within an online environment concerning highly involvement luxury purchases. In an online shopping context, this also entails practical implications. More often, decision making is carried out within a social networking framework, in which individuals rely on the opinions and support of their closest friends or people with similar interests [43, 44].

57.5 Conclusions

Luxury brands face the great challenge of combining the characteristics of the Internet in general and electronic commerce, with the exclusivity associated with luxury brands. However, the current market scenario has begun to diminish the negative implications related to online luxury, the failure of luxury brands to adopt e-commerce can be a problematic issue, and it is observed an increase in the use of e-commerce for the purchase of luxury brands, therefore, it is important to identify the significant factors that represent the perceptions of customers about the online shopping experience for luxury products.

This study conclude that there are eight significant factors that represent the customer's perception of the online luxury shopping experience, which are: e-buying experience, e-loyalty, e-risk, e-satisfaction, luxury value, luxury useless, luxury future buy, and e-buying influence, in that order.

The first is e-experience, which highlights online shopping features that contribute to a positive shopping experience, such as the ease of comparing product characteristics, diversity of brands and greater availability of information, competitive prices, easy delivery and convenient, secure payment and a pleasant way to shop. New technologies can improve the shopping experience and other studies linked online shopping to a quick and easy way to buy.

The second is *e-loyalty*, which has been strongly associated with continued intentions to buy from the same online store whenever customers have positive experiences with the online store. It is important to highlight that positive customer experiences are important for building an ongoing relationship with a brand or company.

The third factor is *e-risk*, which is closely associated with stress or anxiety in electronic consumers caused by online shopping (e.g., risky, scary, unreliable, or with no guarantee of success when shopping online). It is very common for a customer to be somewhat reluctant when making an online purchase, as the feeling of risk is very great compared to traditional commerce. This finding is consensual with several surveys that point out risks related to security with online payments, problems with shipping and delivery, guarantees of goods, electronic trust and the reputation, or reputation of the retailer. Regarding online shopping for luxury products, consumers "perceptions of electronic risk are likely to play a major role in consumers" purchasing decisions, as they are high-value payments.

The fourth is *e-satisfaction*, which is strongly related to online shopping, being an interesting, fun, and enjoyable process. Customer satisfaction is of paramount importance, as it is positively related to the company's profitability and respective market share and is a strong predictor of future customer behavior, for example, electronic loyalty, e-WOM, and Web site recommendation.

The fifth factor is *luxury value*, which lists luxury products as exclusive goods that cannot be mass-produced or distributed, which can guarantee the future value of the product and thus increase the customer's purchase intentions.

The sixth factor identified is *luxury useless*, which is strongly correlated with negative consumer perceptions of luxury (e.g., luxury is only ostentatious, useless,

and old-fashioned). When related to the luxury value factor, this factor dimension opposes consumers to different connotations of luxury products—useless or dated versus quality value.

The seventh factor is *luxury future buy* that is related to the consumer's intention to buy more luxury products in the future. It is likely that the purchase intention is related to the consumers' perception of better quality of luxury products and their future value, in the case of a resale situation. Thus, investments in luxury products, such as art and jewelry, can generate turnover and future returns in the long run.

The eighth and final factor identified is *e-buying influence* that identifies the importance of providing consumers with detailed, truthful, and impartial information so that they can trust recommendations and make wise purchasing decisions. This becomes more important in an online environment that involves high-end luxury shopping.

This study provides several contributions for online luxury brand managers and some directions for further research.

The proposed measurement dimensions' structure is a first step toward developing a multidimensional scale to assess the customer perceptions of the online luxury shopping experience. At a dimension level, the measurement instrument could serve as a diagnostic tool that will allow online brand retailers to determine e-business areas that are weak and in need of improvement. Analysis of data at dimension level of e-buying experience would permit e-managers to identify problem areas within their online stores in order to concentrate resources on improving aspects of e-business that allows for systematic benchmarking over time and across e-business. However, the overwhelming importance of *e-risk* and *luxury value,* on a global e-marketspace, signals another rich frontier for e-commerce researchers to explore, particularly for design science researchers.

Despite the growing importance of e-commerce for business, the existence of empirical studies to investigate the influence of the factors that explain online luxury products (re)purchase intention is scarce. Moreover, the increasing competition on Internet makes customer satisfaction and retention a strategic goal for business success and survival. Therefore, studies in similar directions should be encouraged for developing a more comprehensive knowledge on luxury brands online consumer behavior. Future studies should also investigate the factors that influence online consumption of luxury brands, by luxury good category.

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Chapter 58
Types of Consumer Behavior in Online Shopping: A Narrative Literature Review

Ramilo de Moraes Coutinho Neves, Agostinho Sousa Pinto, and Humberto Medrado Gomes Ferreira

Abstract The present study aimed to analyze the types of consumer behavior in online shopping, through a narrative review of the literature, so that the most prevalent relationships could be established. Through this investigation, it is possible to conclude that there are several types of consumer behavior in online shopping, where the most cited are: impulsive behavior, quality-based behavior, convenience behavior, economic behavior and behavior based on innovation. This literature review points to the opportunity and the need for future research to understand the relationship between consumer behavior in online shopping and existing online payment methods.

58.1 Introduction

E-commerce research became extensive in the last couple years, and this happened mostly because companies and organizations were interested in expanding their markets reaching for more buyers and bringing more visibility to their businesses. Furthermore, consumers also showed more interest in buying products and services in a faster way, from any place and at any time at competitive prices, increasing the local market competition and the purchasing power [1–3].

According to Chiu [4], Liu [5], for the online shopping success and survival, it is essential that they have loyal clients, and for this to happen, there are different

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R. de Moraes Coutinho Neves (✉)
ISCAP—Polytechnic of Porto, Rua Jaime Lopes Amorim, S. Mamede de Infesta, Portugal
e-mail: ramilomcneves@gmail.com

A. S. Pinto
CEOS.PP, ISCAP—Polytechnic of Porto, R. Jaime Lopes Amorim, S. M. de Infesta, Portugal
e-mail: apinto@iscap.ipp.pt

H. M. G. Ferreira
UniFase—Centro Universitário Arthur Sá Earp Neto, Av. Barão Do Rio Branco, Centro,
Petrópolis, Brasil
e-mail: hmedrado@gmail.com

measures to be followed, one of them is analysis, comprehension, and plan strategically following the consumers behavior. And to excel and have a higher rate of assertive in this process, it is important to analyze the types of consumer behavior.

The online consumer behavior has been the topic in a myriad of researches in the last years; considering this it was identified in the literature many studies that analyzed this behavior under various perspectives [6–8]. Thereby, it was performed a narrative literature review of the types of online consumer behavior more frequently cited by researchers and having as its main contribution to the academic e-scientific community a compilation to enhance these concepts comprehension.

The paper is divided into four sections as follow: after this Introduction (Sect. 58.1), The Research Method (Sect. 58.2) explains what was the criteria to select the articles that were used as base to this review, the development (Sect. 58.3) will discuss the online consumer behavior and will also discuss a subtopic relevant to this study, named types of online consumer behavior, highlighting the hedonic and utilitarian types. Section 58.4 will present the conclusion according to the purpose of this study and will suggest further future investigation.

58.2 Research Method

In order to identify the types of online consumer behavior, it was done a narrative literature review. This kind of study has as its main characteristics: one specific investigative question to revise, that was: "What are the types of online consumer behavior?", one thematic literature research, inclusion and exclusion criteria, a summary on the main results and conclusions and suggestions for further investigation [9–12].

The articles search was concluded in June of 2020. The research process on the databases *Web of science* had as the inclusion criteria the themes: "history of decision-making," "impulse buying behavior," "impulsive consumer," "motivated consumer," "online buying behavior," "online consumer behavior," "online consumers behavior," "online customer segmentation," "online purchase behavior," "online purchaser behavior," "online shopping influence," and "web purchasing" using the topic option and without temporal delimitation, getting a total of 377 documents. Later, it was applied the documents exclusion criteria for those that were not articles or proceedings papers, 17 documents were excluded resulting in 360. Then 9 more documents were also excluded since they were not written in English, getting a new total of 351 articles or proceedings papers. Besides that, 2 books were also used in the research.

Making usage of Zotero software, the documents were compiled and analyzed, the ones that were in duplicity or were not relevant to this study were excluded. Finally, there were 25 references to this investigation.

58.3   Discussion

58.3.1   Online Consumer Behavior

The online consumer behavior, including the decision-making process, is constantly evolving in the online context. The limited rationality theory by Simon [13], presuppose that the decision-maker is not totally rational, and therefore, there is also other perspectives that will influence his decision.

Involuntarily, the decision-maker gets himself in a limited rationality stage; consequently, he is affected by different conditions, named as limited time, complex circumstances, limited information available, the overwhelm of information, and the inadequately computational mental power [14]. Leading us to assume that online consumers base their buying decisions not only on rational principles but also on irrational circumstances that will rely on their personal preferences and interests [15].

According to Huseynov [6], there are different types of market segmentation, for example, demographic, behavioral, psychographic, and others. The behavioral segmentation approach that relies on data from e-commerce online consumers real transactions showed the existence of different types of online consumer behavior [16]. The types of behavior identified in the literature are going to be analyzed and detailed in this study.

58.3.2   Impulsive Behavior

The impulsive behavior is one of the behavior types most cited in the literature [5, 8, 17]. It is characterized by the consumer's uncontrollable desire to buy [18].

Weinberg [8] states that stimuli will directly control the consumers decision to buy, and for this reason, it is considered a reactive behavior. The buyer's affective involvement might impact their decision, and these consumers cognitive control are limited and influence the least on the decision.

The impulsive shopping is a kind of relaxation to some consumers; it helps them to alleviate tensions and improves their mental health; it is frequently accompanied by excitement and pleasure feelings and might be triggered by perception and motivation, but for this to happen the stimulus has to be strong enough to overpower any restrictions [8].

The impulsive behavior consumer closes the transaction quickly, and by impulse, it is also shown characteristics that this kind of consumer does not take into consideration weather he needs the product or service he is buying in addition the consumer does not take a clear overview of his budget risking to become indebted [18].

58.3.3   Quality-Based Behavior

This kind of behavior might be bounded to two different strands. The first one refers to consumers that care for products and brands that will show a superior quality, and when buying they will rely on this criteria and will not take the price into consideration [17]. The second happens when the consumer is taken to believe that the product is of high quality. When there are detailed and completed information about the selling product, this might be done through pictures, specifications, comparison to another products. These elements might create on clients a perception about the high quality of the product or service. When there is a lack of information, inaccuracy or they are not available, clients will have a negative perception of quality [19].

58.3.4   Convenience Behavior

The convenience behavior in online shopping is more suitable than the traditional trip to a physical store, and even though it does not bring the opportunity to a sensorial experience which happens in a physical store, it offers an array of other advantages to the consumers [20]. Considering the advantages presented, there are the possibility to finalize your order at any time during the day, minimize the time spent commuting, compare more efficient delivery methods, and join online shops rewarding programs [21].

These consumers are attracted by easy navigation e-commerce platforms, with clear and objective information and offering an easy, fast, and safe purchasing process [22, 23].

58.3.5   Economic Behavior

According to the researchers Liu [5] e Scheinbaum [18], this kind of behavior is associated with consumers that usually prioritize lower price when making a buying decision, different from the quality-based behavior that according to Sam [17], do not take the price into consideration.

The economic behavior might be explained by the reluctance sense and/or the consumers unwillingness on paying the product or service total price [18]. The consumers of this kind of behavior are the ones more sensible to sales. When talking about e-commerce, price is still an important factor to determine the purchasing decision make. Strategies on price segmentation on e-commerce platforms might improve the purchase intention [5].

As stated by Sam [17], the decision-making style of this kind of behavior is to buy the most possible at its selling price. The products at lower price are usually chosen. Carefulness to find the better deal spending the same amount of money.

58.3.6 Innovation-Based Behavior

The innovation-based behavior shows as its trend the purchasing of new products as soon as they are released on the market and relatively earlier than most of other consumers. There is a tendency by some innovators to play as leaders users and being responsible for a considerable percentage on the intention of purchasing [16].

Li [16] states that the innovation behavior will receive stimuli from four types of motivation, and they are: functional, hedonic, social, and cognitive. The functional motivation is characterized by the purchasing of innovative products that might perform better and bring benefits. The hedonic motivation persuades the consumer to buy innovative products that will bring the feelings of satisfaction and happiness. The social motivation refers to consumers need to acquire innovative products that will make them feel unique and special expressing their superiority. The cognitive behavior reflects the purchase necessity to increase intellectual creativity, comprehension, and knowledge.

58.3.7 Comparative Framework Module

Based on online consumers behavior types, that were cited in this investigation, Table 58.1 that follows shows the prevailing characteristic and the conduct parameter respectively to the behavior type.

58.4 Conclusion

The overriding purpose of this study was to identify and better understand the online consumers behavior types, and this was concluded when identified and cited in this study literature. Five types of online consumer behavior were addressed and detailed on this study. The impulsive behavior was the most cited by researchers, and it is mainly characterized by fast decided purchases, by impulse without analyzing the real need, and the less cited is the innovation based behavior that shows as its particularity new or innovative items consumption.

This investigation came to the conclusion that there is a limitation on studies that clearly analyze the types offline consumer behavior. On this way, it is suggested further studies on this subject and to reinforce each type characteristics.

This online consumers behavior narrative literature review will serve as base for future studies that will enable a framework development to allow the correlation of these behaviors to a payment method that will generate higher profit to e-commerce owners. For that purpose, it will be placed in the UTAUT methodology, which is a structure created by Venkatesh [24], that suggests four principal factors that influence

Table 58.1 Font sizes of headings. Table captions should always be positioned *above* the tables

Behavior type	Prevailing characteristic	Conduct parameter	Authors
Impulsive	Uncontrollable desire to consume	Tensions and stress relieve, relaxation and affective bond reaction	Weinberg e Gottwald (1982); Liu, Li, Peng e Zhang (2015) Sam e Chatwin (2015); Scheinbaum et al. (2020)
Quality Based	Influence to purchase associated to quality and price	Stimuli perception and interpretation by information massification, its assimilation will bring to the sense of what is good or bad	Song, Baker, Lee, e Wetherbe, (2012); Sam e Chatwin (2015)
Convenience	Easy consumption	Easily buying at any time of the day, saving commute time and joining online stores' rewards programs	Koufaris, (2002); Wu, e Hsu, (2007); Yan e Dai, (2009); Zo e Ramamurthy, (2009)
Economic	Prioritizes consumption at a lower price	Prioritizing the less expensive product when buying and being sensible to sales	Liu et al., (2015); Sam e Chatwin (2015); Scheinbaum et al. (2020);
Innovation Based	Excited for the consumption of new released products	Technologic products, innovative products, new products and social status	Rogers (2003); Li, Zhang, e Wang, (2015);

the intention and the information technology use; they are: development expectation, effort expectation, facilitating conditions, and social influence.

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Chapter 59
The Role of Technologies in Relationship Management and Internal Marketing: An Approach in the Health Management

Eduarda Tinoco Mendes, Bruno Barbosa Sousa, and Márcia Eugénio Gonçalves

Abstract In health, as in any other industry, technology adoption, if used appropriately, is an important asset and a success factor for a company. Nowadays, it is no longer feasible to talk about health without addressing the role of technology. In this context, the present study aims to understand the impact and role of technologies in a hospital context (e.g., Hospital de Braga), and in the relationship management from an internal perspective (internal marketing). Based on a qualitative approach, the research also aims to analyze how internal communication is made, between employees and between employees and managers in the hospital of Braga. Semistructured interviews were conducted with five employees of the health institution (two nurses, one lawyer, one data analyst, and one computer technician) and a focus group with eight employees as well (four nurses, one computer technician, one administrative, one operational assistant, and a technical/administrative assistant). Currently, a large part of the hospital's employees in Braga is considerably dependent on technology, which is an asset for the preparation of their daily functions. In turn, the hospital unit has made several investments in this regard, standing out against most Portuguese public hospitals. The documentation is almost completely computerized, which facilitates the information sought in time and effectiveness. Both the results of the interviews and the results of the focus group show this technological dependence and an important impact on the work of a large part of the people working at the hospital in Braga. The results show that this technology is successful, but there are still some points to point out.

E. T. Mendes · B. B. Sousa (✉)
IPCA—Polytechnic Institute of Cávado and Ave (IPCA), Barcelos, Portugal
e-mail: bsousa@ipca.pt

E. T. Mendes
e-mail: eduarda821@icloud.com

M. E. Gonçalves
ISAG—European Business School, Porto, Portugal
e-mail: marcia.goncalves@isag.pt

59.1 Introduction

In a society in constant evolution, and in an era marked by rapid technological advancement and by its affirmation and imposition, it is imperative for institutions to adjust to this new reality. The health area is by no means an exception to this rapid evolution, in recent decades there have been several technological investments in hospitals in order to facilitate the work of health professionals and consequently the care provided to patients. With the development of information and communication technologies, health organizations had to adapt to new methods of operation.

The technology implemented at the Hospital de Braga has stood out positively, in the elaboration of the functions of a large part of its employees. The health institution in the North stands out at a technological level when compared to other Portuguese public hospitals, being considered one step ahead with regard to technology. As one of the best and most efficient hospitals in the NHS, with Private Public Partnership (PPP), it held its management until August 31, 2019, under the responsibility of the Melo Group, passing on September 1 of that same year for Public Business Entity (EPE), now the state takes over its management. The main objectives that this investigation set out were to understand the degree of dependence on the use of technologies in a hospital context, to understand how technologies in a hospital context facilitate the tasks of employees, to understand the evolution of technologies over the years in the Braga Hospital, understand how technologies facilitate internal communication, and finally, understand the importance of internal marketing strategies for employee satisfaction and motivation. Data collection was carried out through interviews and a focus group on real dependencies and current needs. Based on the qualitative analysis of the interviews and the focus group, carried out on the employees of Hospital de Braga, it is understood that the dependence on technologies is increasing. The article concludes by discussing the main conclusions and provides final observations, limitations, and possibilities for potential research.

59.2 Health Information Technologies and Systems

In a health organization, the use of IT is essential, and this is true both in the public and private sectors [1]. With the advent of computers, devices have emerged, such as the computer, increasingly sophisticated, allowing greater speed in getting and using information [2]. In the last few years, several information systems have been developed, implemented, and updated, currently, more than 60 IS are available in primary health care and hospital care. The objective is to improve the quality of healthcare provision and management, increase efficiency and technologically update health institutions, improving public services, with repercussions for citizens and health professionals.

The impact of IT on the NHS began to occur in 2010, but it was in 2011 that this was most significant, starting the electronic prescription of medicines, with the

objective of facilitating the citizen's access to medicines, so that he did not have to pass throughout the administrative circuit that happened until then. This advancement in health has brought benefits to doctors, pharmacists, citizens, and to the health system in general, with great cost reduction and simplification of procedures. In 2012, nationwide files were created, containing health data, using information technologies, and within the framework of the NHS. This same year, it was also marked by the launch of the health data platform, developed by the commission for clinical computerization and by the shared services of the Ministry of Health. The health data platform aims to bring people closer to the NHS and is characterized as a privileged instrument of information on health and access to services. It allows health professionals to access users' clinical information anywhere in the country and allows direct contact between the user and their family doctor. All information can be consulted and shared on the user's portal, this portal is an online platform, available since 2012, that allows consulting all the information from the NHS, with the aim of bringing citizens, health professionals, and NHS institutions closer together. In addition to the previously mentioned electronic drug prescription initiative, there was also a dematerialization of the processes associated with electronic death certificates and sick leave. Portugal was distinguished in 2017, by the European health systems observatory, as an example of good practice, being referred to as the first European country with an electronic death certificate [3].

Another major digital transformation in the SNS was telehealth, it is now possible to have access to the provision of health care through teleconsultations, which makes it possible to take the SNS to all citizens, regardless of geographical barriers. The SNS contact center (SNS 24), in addition to providing information and administrative services, also provides screening services, counseling whenever possible, and also makes the necessary referrals, with the aim of improving access, by releasing urgencies and hospitals. All the clinical information of each citizen, (exams, diagnoses performed, date of the last consultations, prescribed medication, among other relevant and important information on the health of the user) is now registered so that it can be shared between the user, health professionals, and health service providers.

Technological advances in hospitals have been growing noticeably, and technologies have become a fundamental part of the smooth functioning of any hospital entity.

59.2.1 Internal Marketing and Internal Communication in Health Organizations

Marketing in healthcare organizations is a relatively recent practice, and that said, for IM practices to work properly in health care, it is necessary that it follow the philosophy of business management [4]. In the health area, internal marketing is mainly concerned with the way in which the organization's management develops its educational teachings, the way it communicates the organization's perspectives and

creates reward systems that improve the capacity and satisfaction of its employees [5]. According to this same author, in a study carried out in relation to hospital nurses, it was found that the management activities used in the execution of internal marketing also included activities to manage human resources (hospitals developed a policy of rewards in relation to the efforts of nurses in their work, and when they reached the desired organizational performance goals, the leaders met the professionals' work needs). Organizations whose main objective is to teach their employees should shape their learning culture accordingly. Watkins and Ellinger [6] suggested that dialogue, interaction, and the exchange of knowledge between members of different departments might be encouraged.

If the leaders of an organization are able to positively guide the teachings and consequently the attitudes of their professionals, this can, in turn, increase the level of service provided to patients. Organizational commitment and job satisfaction, therefore, influence the quality of service, and thus Tsai [5], in his empirical study, identified some hypotheses for the question of behavioral changes on the part of nurses in their daily work, to that the results can be as positive as possible, and so that the commitment to the organization is increasingly greater and better, such as creating training influenced by internal marketing in organizations, encourage continuous learning, highlighting the way in which leaders can empower their employees, creating an organization that learns to influence organizational commitment, and using internal marketing as a mediator between creating a learning organization and commitment organizational. Also, in relation to new employees, it is important that in a first stage, they are provided with ways to get to know the new job, the company, its internal functioning, the functional relations that it establishes with other services and bodies, that is essential both for the development of the new employee and for their motivation [7]. A health organization that cares about its employees, that cares about its continuous teaching, may be able to guarantee a stable provision of quality health care, and in turn patient satisfaction. The use of internal marketing, consequently, makes the employees of a hospital transmit the objectives of a hospital abroad [5].

59.2.2 Internal Marketing and Internal Communication

Communicating within an organization is synonymous with motivating, estimating, integrating, improving the relationship between employees and between employee and employer, in addition to encouraging inclusion [8]. Communication between the management of an organization and its employees is one of the elements of internal marketing and mass communication should promote information about new marketing strategies involving the use of newsletters and other sources [9]. Internal communication must be made from leaders to employees and in the opposite direction, about all aspects of the company and people as a whole. Piercy [10] adds that there must be formal meetings, reports, presentations, and good communication and response by managers to their employees. Kalla [11] identifies four types of

communication within internal communication: business communication, which is concerned with the communication skills of employees, management communication, which focuses on the management of competences and communication skills, corporate communication, where the focus is on formal communication, and finally on organizational communication, focused on philosophical and theoretical issues.

Currently, there are several forms of internal communication, coming from the new information technologies as a means of communication, and nowadays, it is easier and faster to transmit all important information within an organization. According to [12], new information technologies result in internal communication support, such as electronic mail, newsletter, video conference, and intranet. The same author argues that the sharing of information thus acquires new characteristics and becomes the main source of energy for the organization, occupying less space, less time, and greater contact between employees and management. In the near future, there were few companies that had their newsletters to communicate with external customers, and even fewer those that had internal newsletters to communicate with their employees [13]. As communication is valued within the organization, due to the possibilities of contact with all stakeholders, new resources and new practices are being adopted that change the structure and redefine the way in which organizations work in the twenty-first century. Alves et al. [14] maintains that ICT can promote a new relational life between the organization and its employees, developing a greater production capacity.

Internal communication is processed and affirmed through a multiplicity of means and instruments, but the intranet stands out as an instrument of excellence for the consolidation of an internal communication policy, which is intended to generate positive participation through a motivational reinforcement of all employees, by providing clarification on the path that the organization intends to follow and involving them in this project [15]. The intranet is seen as a direct channel between the organization and its employees, they are local computer networks that are connected to each other, and where only authorized persons can access [16]. The Internet and intranets provide employees with power, influence communication, and collaboration and accelerate access to information, with immediate return on investment. Unlike physical installations and their functionalities, on the intranet the space is virtually infinite, and the functionalities are only limited by the imagination [13]. This same author advises the organization to never forget to go back to the beginning, to never forget to start over, stating that an intranet is never finished, and if it is considered completed, it is because it is dead or inadequate to reality. Thus, information and communication technologies enable various forms of communication in an organization and present content exchange models, and communication between all people who are part of the company is valued, and this is fundamental to encourage integration, increase motivation, and enhance the active cooperation of employees [15].

59.2.3 Technology at Braga Hospital

In recent years, several information systems and technologies have been developed, implemented, and updated in health institutions. The objective is to improve the quality of healthcare provision and management, increase efficiency and technologically update institutions, improving public services, with repercussions for citizens and professionals.

According to technological evolution, the IS in health has developed rapidly, so that the information is used in the most efficient way in the management processes of health services, allowing efficient use of resources involved in the provision of care of health, [17]. Information technologies (IT) and information systems (SI) are spread in different ways, in hospital entities, among the simplest communication and information applications, to the most sophisticated equipment for diagnosis and disease screening, and in relation to all this, Braga Hospital is no exception. Freixo and Rocha [18] also states those information systems are more than an advantage, they are a requirement and should be experienced by organizations as a constant concern. Since 2014, Hospital de Braga has been considered the best hospital in the country, for obtaining the best national classification in clinical excellence in the national health assessment system (SINAS), developed by the health regulatory authority. Since 2015, it has won first place in the group of best medium/large hospitals in the National Health Service in the following prizes: TOP 5—Hospital Excellence, promoted by IASIST—multinational hospital benchmarking company. Among the various distinctions achieved to date, the following awards stand out in terms of the technology implemented at Hospital de Braga (Hospital de Braga: distinctions, 2019):

- Hospital do Future Award (2013) is an initiative of the hospital of the future forum and aims to highlight people and organizations that contributed to the development of Health organizations in Portugal. This distinction was due to the quality management system implemented Braga Hospital;
- Sustainable health award (2015) is an initiative of business newspaper and Sanofi and aims to distinguish, disseminate, and encourage good practices and health sustainability in Portugal. The prize was awarded in relation to clinical quality and health results, taking into account the user's experience, environmental responsibility, innovation and technology in health and economic and financial sustainability;
- Award for excellence in the health sector (2016), it is an award recognized by the Minister of Health attributed to health services, departments or units, with high competencies in the provision of health care in clinical situations that require highly differentiated technical and technological resources, due to the low prevalence of the disease, the complexity of its diagnosis or treatment and its high costs. This distinction was attributed to the area of adult oncology, more specifically to the treatment of cancer of the rectum by the general surgery service.

Braga Hospital has several types of technology, information systems, equipment with technology considered to be first-rate, to help provide health care to around 1.2 Mio. People in the districts of Braga and Viana do Castelo. Currently, several general computer applications are in use in the health organization, such as (Hospital de Braga 2018):

- SI CTH—a Computer System for Consultation in Time and Hours;
- SIGLIC—a Computer System for Managing Registrant Lists for Surgery;
- GESTCARE CCI—an IT System for registration and monitoring of the National Network of Integrated Continuous Care;
- RNU—National Registry of Users;
- PDS—a Health Data Platform (safe surgery registration, electronic prescription and others);
- SIM @ SNS—a National Health Service Monitoring Information System with three components: SDM @ SNS, SIARS, and MIM @ UF;
- SICA—a Contracting and Monitoring Information System;
- SIMH—an Information System for Hospital Morbidity.

In addition to these general computer applications, there is also a specific computer system in use at Hospital de Braga, with the name glintt, used by administrative and clinical areas, for hospital and patient management. The use of health information systems has ceased to be sporadic and has become a rule for hospitals, to allow the reduction of data processing and processing and to guarantee the validity and timely availability of all health information [19]. Braga Hospital has been worthy of great prizes, demonstrating the quality of its care, which without the aid of technology, would make a large part of these results impossible to achieve.

59.3 Methodology

This study used a case analysis research project to investigate the propositions, and semi-structured interviews were conducted with five employees of the health institution (two nurses, a lawyer, a data analyst, and a computer technician), and a focus group with eight elements, also professionals from Hospital de Braga (four nurses, a computer technician, an administrative assistant, an operational assistant, and a technical/administrative assistant), to try to understand the degree of dependence on technologies and the impact within the institution. This study provides a basis for the systematic study of subjectivity, such as a person's opinions, opinions, or attitudes. The main constructs are extracted from empirical surveys among employees of Hospital de Braga, in which data analysis was carried out along a qualitative analysis. Qualitative research methodologies are inspired, among others, by the assumptions of the constructivist paradigm [20]. The reality is, according to the principles of this paradigm, socially constructed and perceived as a mental and intangible construction, with a social and experiential basis, predicting the existence of multiple realities [21]. The investigator and the object of investigation are linked to each other [20]. The

qualitative paradigm is the most used in the scope of research, and it covers several ways to plan an investigation and may eventually contribute to a better understanding of the sources [22]. In this type of investigation, the roles of the researcher and the investigated have similar characteristics in that both are at the same time, interpreters and knowledge builders according to their socio-cultural schemes, in a process of the double search for meaning, which is called "hermeneutic duo." It is a method of collecting information that consists of oral, individual, or group conversations, with several carefully selected people, whose degree of relevance, validity, and reliability is analyzed from the perspective of the objectives of collecting information. This type of instrument facilitates the interviewees' sharing of perspectives and experiences on the phenomenon observed by the interviewer.

The focus group is one of the qualitative research techniques and is considered to be one of the most important. This technique is known for the elaboration of an interview in an unstructured and natural way, regulated by the researcher, with a minimum of 8 participants and a maximum of 12, and it is not advisable to be less than 8 and more than 12, as the sample can insufficient or excessive working. The main objective is to obtain an in-depth view by listening to a group of people talking about problems of interest to the researcher [23]. The importance of this technique is in the unexpected results that can be obtained in a "free discussion." The realization of a focus group can be very beneficial at the stage of data collection in an investigation. In the present investigation, the participants in the focus group were chosen from a non-probabilistic sample, which means that they were purposely selected by the researchers to collect the necessary information. The criteria for the selection of stakeholders, related to the specific context of the study, focused on the fact that individuals work at Braga Hospital, trying to have some diversity in the ages of the stakeholders so that there was a slightly different opinion about the study problem. The technique used was always content analysis.

59.3.1 Sample

The interviewees were selected with the aim of a better interpretation of the subject matter of the study, representing the employees of the Hospital de Braga. It was observed that, on several occasions, the interviewees also easily placed themselves in the role of the user, allowing them to enrich the content of the interview. Five interviews were carried out (Table 59.1), and a focus group with eight participants (Table 59.2). To maintain confidentiality, a table was drawn up where the interviewees were listed and characterized. For the analysis of the study, there was an interview script, between eighteen to twenty-two questions, some questions being asked only to some employees, considering their specific areas. Five observation themes were devised: theme 1 (understanding the degree of dependence on the use of technologies in the hospital context), theme 2 (understanding how IT in the hospital context facilitates the tasks of employees), theme 3 (understanding which the evolution of IT over the years at Hospital de Braga), theme 4 (understanding how IT facilitates internal

Table 59.1 Five interviews in the context of the study conducted at Braga Hospital

Participant	Genre	Position occupied by the respondent
A	Female	Nurse
B	Male	Nurse
C	Male	IT technician
D	Female	Data analyst
E	Male	Lawyer

Table 59.2 Participants in the focus group

Interviewee	Genre	Position occupied by the respondent	Professional experience (years)
A	Male	Nurse	5
B	Female	Nurse	26
C	Male	Nurse	10
D	Female	Nurse	1
E	Male	Computer technician	8
F	Female	Administrative	6
G	Female	Operational assistant	2
H	Female	Technical/administrative assistant	2

communication), and theme 5 (understanding the importance of internal marketing strategies for employee satisfaction).

59.4   Discussion and Findings

The interviews started with questions related to the use of technologies used by the interviewees and their dependence on each other's daily lives. The target participants of the study showed evidence that led us to conclude that there is indeed a great technological dependence, and their daily use is a fact among them. There is, on their part, a clear awareness of the value that technology brings and the help it offers, without it, everything would be different (negatively), more complicated and for some, the information sought would be much longer and sometimes impossible in due time (Table 59.3).

In the second phase, we wanted to understand how the digitization of documentation in the hospital context is seen by its professionals. There is a great deal of subjection in relation to technologies, and to return to the age of paper is generally unthinkable among the interviewees. Digitization is viewed favorably, and for nurses not having the patient's history digitized and easily accessible on the computer, it is already unthinkable. If there is a computer stop, the hospital generally stops, no one can work like that. However, the general idea that technologies are beneficial and help in the daily life of each employee, is questioned by nurses, when talking about

Table 59.3 Sample of illustrative phrases from the interviews

Illustrative phrases	
B	(…) of course, now practically everything is done with the help of technology, and what is not, has to be transcribed there (…)
C	I always use technology, the opposite didn't even make sense
E	I practically always use technology, but there are things in my area that have yet to be done and consulted on paper (…)

Table 59.4 Sample of illustrative phrases from the interviews

Illustrative phrases	
D	Glintt really requires us to spend a lot of time with it, and that time is taken away from the patient
C	(…) If we went back to the paper in general, here in the hospital, most of them, not to mention all the employees, were unable to work (…)
D	And whenever there is a change, we can request training. The duration of the training is never very long, it takes a few hours, and it always depends on the importance of the system and its importance for our practice

the computer system they use, the glintt, who claim to force them to lose a lot of time recording unnecessary things. It has also questioned the existence of training courses for adapting to technology and consequently its updates, which we found that new professionals, depending on the area, can count on training, or with the support and explanation of colleagues in the service, so that, adapt to all the technology implemented and necessary for the elaboration of their functions. We realized that using technology, as a work tool at Braga Hospital, is, in general, a facilitator in the execution of tasks, you can save a lot of time by being able to access everything through a computer. We also found that the information that is passed on the patient is now, in the age of technology, more accurate and secure (Table 59.4).

Even though Braga Hospital is a highly developed hospital in relation to technologies, part of its collaborators does not use the latest communication technologies as a first option, preferring and valuing personal communication between co-workers. The use of e-mail happens when the matter is not urgent and does not need an immediate response. However, some professionals stress that, in addition to the importance of being able to exchange information in person, or by telephone, the latest technologies have brought other facilities and amenities these days. Technology (e-mail) brings employees closer to managers and vice versa, creating facilities to communicate and deal with many matters between superiors and employees.

In the face of the Hospital's employees, there is discontent about the lack of concern on the part of their superiors and the institution to motivate them and keep them satisfied (Table 59.5).

It is concluded that the Hospital de Braga is quite developed with regard to technology, and investments in this regard are notorious; however, there is still a lot of work ahead, with regard to the motivation and satisfaction of its employees.

Table 59.5 Sample of illustrative phrases from the interviews

Illustrative phrases	
B	*No motivation, no satisfaction. Nobody cares if you are tired, unmotivated if our hours are excessive…*
G	*Motivation?! Satisfaction?! Who cares about that?! The bosses are certainly not*

The technology was implemented in the healthcare organization about 21 yr ago, and since then, continuous efforts have been made in relation to its implementation and modification, so that the results can be the best and fastest possible. It was always implemented at the right time, which leads us to conclude that the Braga Hospital, in addition to being one step ahead of many other hospitals in terms of innovation, invests in this direction in a very thoughtful way. The new technologies introduced a set of new organizational aspects, increased the capacity to archive documentation, analyze and transmit large volumes of complex information, in a more secure, flexible, reliable, and immediate way. Braga Hospital is one of the most technologically advanced hospitals in the country, and as it becomes more digital, consequently its employees become more dependent on this technology. This fact is known and made aware of among professionals, and the ease with which they are now able to access all information is unquestionable.

It is felt among the employees of Hospital de Braga, the appreciation and dependence in relation to access to information in an easy and quick way. The dependence is so great that, in the event of an interruption in the system, some professionals even refuse to work, even going so far as to send the sick away. The truth is that the age of paper is moving toward the end, and the need to adapt to this new reality is perceived and felt among the participants. Increasingly, technology provides them with security in what they do, everything is recorded, everything they do every day is pointed out, and no one can question their work. It is undeniable that technology is a great help in the area of health, no one doubts that nowadays diagnoses are faster and more accurate, that there is greater agility in consultation and information exchange. However, despite all this dependency, there are still areas in the hospital, which do not use only technology, and sporadically, there is still something or other that has to be done using paper, as is the case with nurses.

Braga Hospital has made continuous efforts in relation to the implementation and modification of technology, and all these efforts are generally recognized and valued by its collaborators; they have very positive opinions regarding the impact of digitization, which in addition reducing the loss of information gives them more confidence and reliability. The fact that the information is now more accurate, and its tampering more difficult to happen, is also an added value and security for the user himself. In addition to all the advantages, there was an annoyance on the part of nursing professionals regarding the information system with which they work daily, the glintt, testifying to the fact that it is still far from meeting the needs of professionals who if they are forced to work with him. From the outset, it seems to us a necessary condition that the elaboration and definition of an information

system incorporate the collaboration of all the people involved in all areas and not only the technical area of the institution (Berg 2001), thus reducing the probability of dissatisfaction with part of its users towards the IS, and managing to overcome this problem experienced by nurses at Braga Hospital. Health professionals may feel that the system does not fit and is not appropriate for their work routines, and this is because they are not free to give their opinion and contribution to the elaboration of the same. Regarding the reliability of the information systems, implemented at Braga Hospital, the lack of concern is notorious, due to the almost inexistence of failures at the technical level, which leads us to conclude that they work close to perfection, in relation to possible failures. The hospital provides training to its employees about the technology implemented so that they understand its operation and can use it in the most positive way possible. Regarding the glintt information system, there are also training courses on how it works, but in this case, its duration is continuous. The health institution also values the integration of its new employees, who can count on training, so that they can adapt to all the technology implemented and necessary for the elaboration of their functions. However, that on the part of the Braga Hospital, there is a preference to hire professionals who have already interned in the health unit, so that the integrations are no longer a "headache," and the training is unnecessary so that this charge is not necessary. However, there is a motto of mutual assistance toward new professionals, being accompanied and supported by older colleagues.

However, some of the professionals at the Braga Hospital may not always use technology as a means of communication, as their profession does not allow it. The nursing area requires special and attentive care toward the patient in almost all situations, and, consequently, it has to use what allows it to communicate in a faster and safer way, always in favor of the patient, which is understandable because a minute can save a life. When it comes to caring for people, when human life is at stake, new technologies are not always the most beneficial form of communication between nursing professionals, as they need an immediate exchange of information, which leads them to give priority and to value personal communication with co-workers. Relevant information is always passed orally between colleagues in the same unit when making the shift, and only in case of doubt do they use the computer system. The use of e-mail happens when the matter is not urgent and does not need an immediate response. However, other hospital areas do not require close proximity to the user, which allows them to take greater advantage of new communication technologies, and in addition to using the phone with some frequency, it is by e-mail that most part of internal communications. The fact that they have some margin of response time and that they can reach several people at the same time, regardless of distance, are some of the advantages of using new communication technologies. That said, there is thus a distinct way of prioritizing the various forms of communication within the Braga Hospital, in the different areas of study. As for the internal communication between managers and collaborators, collaborators, and managers, technology, more specifically e-mail, emerged to create a greater "rapprochement" between them, there is now ease in communicating and dealing with many matters between superiors and collaborators. The e-mail is seen as a reminder and sometimes security of what was treated. However, there is an interest on the part of some managers in selecting the

subjects that they think are pertinent to be registered, which ends up not giving freedom to the collaborators to deal with all the matters that they think opportune by e-mail. Although it is also necessary not to fall into the facilitation of technologies, because sometimes there is a lack of care on the part of some professionals, and they end up using the media in an excessive way, which ends up being harmful in internal relations of the health organization, leading to everything being dealt with in a more virtual way, and ignoring the need to create some types of bonds necessary for the good functioning of the hospital. Technologies, if used properly, with awareness, can be a good communication strategy within an organization.

Since the challenge of MI, in any organization, is to motivate its employees, making them decisive, confident, committed, and enthusiastic in the development of their work, in order to achieve the organization's objectives (Chiavenato 2014), we analyze whether internal marketing principles are being adopted in the best way by Braga Hospital, and we try to understand if they have an impact on the satisfaction and motivation of its employees. We were also able to conclude, after being asked about this topic, that nursing professionals feel a great deal of dissatisfaction in terms of salaries, schedules, exhaustive work, and, until there may be some initiative on the part of the hospital with the intention of to motivate them, this will never be enough if it is not an initiative that directly affects them, and in relation to the needs that they have been demanding.

However, Braga Hospital shows a little concern with the satisfaction and motivation of its employees, but within what he (hospital) thinks is relevant. As for the acknowledgments on the part of the managers, in relation to the efforts and work of the employees of Braga Hospital, these are not felt, and the testimonies given by the participants convey the demotivation and dissatisfaction on the subject, the opposite of what is intended when one speaks of IM. It is notorious, after hearing all the participants, that the concern on the part of the health institution, about the principles of internal marketing, is quite reduced. It is felt, in general, the discontent of the participants in relation to the valorization of their efforts.

59.5 Conclusions and Future Research

Braga Hospital employees are really dependent on the technologies implemented, and if, on the one hand, they are obliged to use them, "*we are obliged to use the technologies on a daily basis (…)*" (participant D), since the technologies are essential for the health institution, (Sousa 2005), on the other hand, when they temporarily come without them, they are no longer able to work, "*(…), they feel completely lost, (…)*" (participant C). The improvement of the IS, and its evaluation, must be considered in any hospital institution, even more so, when a professional class such as nursing, demonstrates discontent in this sense. Braga Hospital, like other hospitals, needs to ensure timely and necessary information for its professionals, and in this regard, this hospital institution has made several and thoughtful investments "*It is a hospital that is always innovating, this does not for, there are always new things.*"

(participant C). As in the entire health area, in the northern health organization, the implementation of technology is a process whose success depends on various types of activities, including the teaching of its users, training them and teaching them about its use (Tan 1995), an aspect that this hospital shows not to do without. The role of technology is very important in the internal communication of Braga Hospital, and regardless of whether there are health professionals who can only use it in a timely manner, this is, in general, quite important in that it allows employees to get closer to each other and also in relation to bosses. The challenge of IM is in any organization, to motivate its employees, making them determined, confident, committed, and enthusiastic in the development of their work, in order to achieve the organization's objectives, and for that very reason, Braga Hospital should reflect better on its IM challenges, taking into account the discontent felt, "*Nobody cares about our satisfaction and if we are motivated."* (participant A), and rethink the best way to achieve them, always prioritizing the motivation and satisfaction of its employees. This study followed an entirely qualitative approach, using semi-structured interviews, and the development of a focus group. However, it will also be important in future work to consider a quantitative approach (i.e., administering surveys by questionnaire) that allows researchers to increase the strength of the data collection instruments and thereby improving the quality of the results obtained. There was a difficulty in generalizing the results obtained since the sample was non-probabilistic and subject to a certain context of an investigation. The range of professions of the focus group and interview participants should be larger and more diverse, focusing on ages over 35, so that one could have a better conclusion about the study. It is also suggested a study extended to other public hospitals in the country, in order to be able to make data comparability.

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Chapter 60
Understanding a Lovemark Brand Through the Sponsorship of the Peru National Football Team

Xiomara Cruz-Donayre and Eliana Gallardo-Echenique

Abstract Brands are eager to gain their consumers love and respect by connecting with them in a more efficient manner in order to become a Lovemark. This happens very frequently in the football "world" as it is the sport with the biggest audience in the planet. This study analyzes the Lovemark Axis inside the sponsorship strategies directed toward the female audience. Semi-structured interviews were conducted, with the aim of analyze the perception of the consumers exposed to the ads of the sponsor brands of the Peru national football team. Results evidenced that the love and respect elements for the sponsored brand contribute to the association of values and feelings of the sponsoring brand. These results support that although the construction of a Lovemark requires a great period of time, the use of sports sponsorship helps to generate greater visibility and association of the brand with the sport.

60.1 Introduction

Throughout the years, brands are aiming at increasing their customer loyalty and respect to become a Lovemark [1]. A Lovemark is built by developing the aspects of love and respect of each brand [1], building this would allow companies to achieve a higher level of love, respect, and loyalty from the consumer [1, 2]. This is reflected in the consumer's confidence toward the brand, as well as in the constant sales of the brand, since the consumer of a Lovemark does not have the need to try other products and will always buy the brand he or she loves regardless of the price [1–3]. This search for brands to be loved by their consumers is a difficult task to achieve within the advertising world and even more so in sports. The involvement of brands in sports is highlighted mainly through sponsorships [4].

X. Cruz-Donayre · E. Gallardo-Echenique (✉)
School of Communications, Universidad Peruana de Ciencias Aplicadas, Prolongación Primavera 2390, Lima 15023, Peru
e-mail: eliana.gallardo@upc.pe

X. Cruz-Donayre
e-mail: u201110652@upc.edu.pe

Sponsorship is an integrated communications tool, which consists of a cooperative relationship between an organization being sponsored and a sponsor to generate a marketing activity in a specific event [5]. Not only does it mean to invest in someone, but it seeks to connect the brand and the consumer through a complete experience working with other communication tools and disciplines with the premise that this association will benefit the image of the sponsor [6–8]. Within the sports "world," it is hard to imagine the absence of sponsorship, especially one that involves football [9].

If we consider the goal of becoming a Lovemark and the largest advertising space at football to reach a massive audience, we could be able to create a Lovemark within an advertising space related to sports. Today, many brands are committed to develop a sports sponsorship strategy in association with other brands to increase their level of recognition and engagement to improve the relationship with their consumers, and the best way to do it is to be engaged in activities that connects emotionally with them [10, 11].

The beauty of the game of football is that only requires a ball and the desire to play; this simple event can paralyze an entire country [12]. Football is the sport with the largest audience in the world, which moves big amounts of money through its events and amaze millions of people like no other sport [9, 13]. Football has a unique ability to unite people of different socioeconomic levels and captivate the advertising investment of big brands due to its large audience [14–16].

According to Roberts [1], everyone wants to experience some sort of connection with the brand through his own emotions. The emotional connection that fans have with football is a good leverage in advertising, even more in the South American market where the passion for football is a distinctive feature of this society, making this sport a way of life [17]. Unlike other countries in the region, Peru has a football team that has not yet been glorified as one of the world's top football teams [18]. Regardless of the support of their fans [19], the team has not consolidated itself as an economically valuable brand [20].

Every season, football monopolizes the advertising industry and despite its results, the Peru national football team receives an enormous advertising support [21]. However, advertising is losing effectiveness, due to advertising saturation in mass media, which affects its identification and does not allow the public to connect with any brand [22]. By analyzing the different investment opportunities that football can offer to a brand, this could be a good showcase to connect with its consumers if its target audience is linked to the football "world" [23]; such opportunity needs to be exploited by brands which ultimate goal should be to become a Lovemark.

60.2   Methodology

60.2.1   Research Design

This paper aims to analyze how the Love/Respect Axis of Lavaggi affects the same Axis of the Peru national football team with its sponsorship strategy whose audience is mothers. The purpose of this qualitative study using a phenomenological approach, its analyzes the sport as a social phenomenon through personal perception of each actor involved during this study and expect to understand their experiences, feelings, and beliefs in this matter [24–26].

This study analyzed the advertising strategy of "Aldo Corzo" from Lavaggi, one of the main sponsoring brands of the Peru National Football Team, during the 2018 FIFA World Cup qualification process and participation [27].

60.2.2   Sample Selection

Football is a sport that is mainly targeting a male audience, but recently in Peru is developing advertising messages focus on the female audience, especially mothers. With homogeneous and convenience sampling, eight housewives of socioeconomic status (SES) C from 25 to 39 yr old were interviewed [28]. It is important to highlight that Lima represents 35% of the total population of Peru and contains the highest percentage of women belonging to the SES C [28]. Recruitment ceased once theoretical saturation was reached, which means that no other relevant data were found and no new themes emerged [29].

60.2.3   Data Collection

Following the approach of a phenomenological design [26], interviews were conducted, with the aim of analyze the perception of the consumers exposed to the ads of the sponsor brands of the Peru national football team. To conduct the interviews, a semi-structured interview guide was designed to ease a line of conversation but also be adapted to the answers of the consumers for a deeper analysis [30, 31]. Two advertising specialists who have worked directly with the brands involved in this research validated this interview guide. The validation was carried out following the guidelines set by Escobar-Pérez and Cuervo-Martínez [32], taking into consideration the following categories and subcategories:

60.2.3.1   Brand Construction

Brand identity consists of a core identity and includes the visual identity. It is the internal self-perception of the brand, which implies a promise from the company to the consumer [33, 34].

Brand equity is how the customers feels about the brand and is built with the name, symbols, and visual identity [35, 36].

60.2.3.2   Lovemark Elements

Love Axis is the emotional attachment developed by the consumer to the brand based on the customer experience and emotions [1] such as:

- *Mystery* is the feeling of newness that is developed by the brand drawing stories, metaphors, and icons that can nourish the consumer-brand relationship with revelations and excitement [1, 2].
- *Sensuality* is the way in which the five senses of the consumer are stimulate by their environment. This element presents the brand more appealing for their customers based how the brand strategically manage their sensory messaging [1, 2].
- *Intimacy* is a sense of closeness, and the degree of positive feelings a customer has toward and makes him loyal to the brand [1, 37, 38].

Respect Axis is the perception of the customer based on the functional aspects of the brand such as [2]:

- *Performance* is the customer satisfaction about the functional properties of the brand such as price and durability [1].
- *Trust* is the brand credibility of the customer that is build based on beliefs of reliability, dependence, security, and honesty [1].
- *Reputation* is an overall estimation about a brand, developed based on its decisions, actions, and behavior [39].

60.2.3.3   Sponshorship

Sport sponsorship: A marketing communication tool that associates a sponsor brand with celebrity athletes, teams, or events in order to transfer associations, usually in exchange for a payment of money [40].

Peru National Football Team: Peruvians football players that participated in the 2018 FIFA World Cup.

Sponsor brand: Brand that may exchange money, services or any good in return of the association with the image of the sponsored brand [40].

60.3   Results and Discussion

The results suggest that following a particular football team has been more of a family tradition than anything else. The construction of a Lovemark in sports within a female audience is mainly developed based on trust, identity, and interest in sports. The female audience usually gets involved with sporting events by association with family traditions, whether it is from their parents, their husbands, or children [41, 42].

> I'm only a fan of the Peru national football team, because it represents my country. (E001, 25 yr old).
>
> Since I was a kid, I was a fan of "U" [Club Universitario de Deportes, also popularly known as Universitario and "U"]. My dad has been a fan of the "U", and that's something that can be passed down through generations. (E004, 37 yr old).
>
> I'm a fan of Muni [Municipal football team], because it's a very close team. It is for the neighborhood people […] The people who strive, seek and find what really a sport is. That's what I love the most. (E008, 37 yr old).

In line with Shuv-Ami, Vrontis, and Thrassou [43], the interviewees affirm that the image of a football team is also built by the image that projects the team's management. Some interviewees pointed out that the Board of Directors of a football team is usually associated with corruption and the pursuit of profit.

> The Board of Directors, because there is corruption around them and also, they look for personal benefit. (E007, 26 yr old).

Our analysis highlighted the lack of knowledge of interviewees about the sporting events associated with Lavaggi brand, and they only recognize the ads with players of the Peruvian team without getting involved with the brand. This situation can lead to lower level of identification of the customer with the brand and cause confusion about the brand's identity and his brand promise.

> Before this TV spot with the team [Peru national football team], I don't remember brand that much. I don't know about the brand history [Lavaggi]. (E001, 25 yr old).
>
> I don't know the background of the brand. I remember Lavaggi for his association to the Peru national football team. (E007, 26 yr old).

According to participants response, the main connection that exists between Lavaggi and the target audience is based on the emotions of pride, identity and passion related to the Peru national football team.

> I think Lavaggi's reputation is good; not based on the product since it is similar to other brands of noodles; but based on how his identity is being built around the team [Peru national football team]. (E001, 25 yr old).
>
> Lavaggi transmits energy to me, because its related to national football team. […] I think so, because I don't believe that any brand could been associated with the team, but at the same time I'm not sure about it. (E006, 26 yr old).

There are reasons such as feelings, emotions and subconscious desires, which motivate the decisions of female audience take on a daily basis. The results showed

that an important and emotional link of the interviewees with the brand is the image of personal fulfillment that portrayed players of the Peru national football team, which reflects the desire of their personal growth. It is easy for them to associate the inspirational stories from the players, with what they desire for their families. This is also linked to what Lavaggi and the Peru national football team represents to them as a Peruvian. These brands bring a big emotional connection, which represent a great starting point for any brand to build a good relation with the audience [44, 45].

> I know some of them (football players) come from low-income families and have work very hard to make progress. (E003, 31 yr old).
>
> They reflect in every story, in every achievement of the player and the team. Someone who desires to be a football player look up to them [as role models]. (E007, 26 yr old).

Participants clearly shown feelings of closeness with the Peru national football team, but they do not identify Lavaggi at the same brand position. This results shown that Lavaggi fulfill the customer expectations related to trust, reputation and performance; however, the brand still has not developed the Love Axis as much as the Respect one, which has led to a superficial emotional relationship with his audience. According to the results, the location of both brands is near the Lovemark position (Fig. 60.1). In addition, both brands somehow connect with its users in an emotional level or the customers perception based on the functional aspects of the brand, but both brands failed to effectively position themselves as Lovemarks.

To create a Lovemark at Lavaggi and the Peru national football team, both have to take care of the Respect Axis and to develop communications actions to increase

Fig. 60.1 Position of the Peru national football team and Lavaggi in the Love/Respect axis

the positive perceptions about them. Developing Love Axis through the sponsorship strategy allows brands to become more attractive to customers, which could serve as a starting point to establish a consumer-brand relationship. This strategy has success when both brands have a mutual audience and are committed to the same values, which allow them to develop effective messages that address the needs of their audience to keep them engaged [46, 47].

These results are also a product of what these brands have been working and giving to the audience through the years. Investing time in the success of a sponsorship strategy allows the brands to exploit their emotional connection with the audience, so this can lead to long-term relationship between the brand and its customers [48]. On the sporting world, a development of loyalty toward the brands involved is reflected in brand earnings. Regarding football, fans who are satisfied with the performance of their teams, as interviewees pointed out, tend to speak positively about their favorite team to their friends, acquaintances, relatives, family, co-workers, or anyone around them [48]. Their loyalty and closeness become a family tradition that allows the brands to continue building a relationship with the fans of the sponsored team.

60.4   Conclusions

This study analyzes how the Love/Respect Axis of Lavaggi affects the same Axis of the Peru national football team with its sponsorship strategy whose audience is mothers. The elements of a Lovemark that are most likely to being affected by a sports sponsorship are the elements of the Love Axis, such as in the case of Lavaggi. However, it is crucial that brands work with equal intensity improving the visibility of other actions included in their sponsorship strategy, since these efforts can affect the customer perception and increase the levels of Love/Respect Axis.

Although within the theory of Lovemark [1], the Respect Axis is based mainly on elements related to the performance of the brand. In the case of sports, the results show that the football score does not always affect the perception of the female audience, because for them the effort to reach the goal has more value than the final outcome. For that reason, it is important to highlight that developing a sports sponsorship strategy add emotional elements to the brands such as identity and loyalty that are hard to gain but that can remain despite the results. This could be relate to the feeling of closeness that customers developed with football players as a reflect of their own stories of struggle and desire for personal growth, elements that have been identified by the mothers interviewed.

The elements of implication, identity, and loyalty are extremely relevant to connect with the consumer, as well as making the sponsorship actions more significant them. According to the results, the interest of the female audience for sports is mainly developed based on their children, family interest and traditions. On the other hand, the brand identity of the sports teams and the history surround the football players makes that the messages resonate more deeply with audiences. Therefore, we can conclude that elements as identity and history can trigger a reaction in the customer.

The element of loyalty has an effect in the audience, since they associate the respect for their team and other values with the sponsor brand, just like in the case of Lavaggi and the Peru national football team. As the result of the unification of these elements, the brand can create a better and lasting relationship with his customer.

Lavaggi is identified by his customers mainly due to the long years of presence on the market. It is important that Lavaggi does not assume that they have a strong customer-brand relationship, because interviewees are not familiar with stories or visual elements of the brand, and they remembered only ads that involved football players. Therefore, the consumer only knows the brand superficially without delving into other aspects that would allow him to form a more meaningful relationship with the public. In the case of the Peru national football team happens something similar, the customer tends to associate more to the brand only in football season and does not get involves with the youth football team and other categories as much as with the Peruvian football first team.

These findings are relevant for advertisers, marketers and researchers and provide interesting contributions to the literature on strategies of sport sponsorship directed toward the female audience. Although the construction of a Lovemark requires a great period of time, these results support that the use of sports sponsorship helps to generate greater visibility and to develop strong brand associations with the sport. It is relevant that the sponsor brand develops its strategy in a long-term project based on the emotional and functional aspects of the sponsored brand, so this can lead to a long-lasting customer-brand relationship.

60.4.1 Limitations and Future Research

This study is not free of limitations, the study analyzes female perceptions in a specific context, Lima (Peru) with homogeneous and convenience sampling, which limits the generalizability of findings. Future studies should analyze the Love/Respect Axis and their elements separately, with the aim of studying how each element adapts itself and identify the degree of influence on the sport sponsorship strategy. Finally, it is recommended to perform this analysis in both female and male audiences, in order to know how the perceptions of both audiences exposed to the same advertising messages can differ due to their different social backgrounds.

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Chapter 61
Digital Tourism Marketing: Case Study of the Campaign Can't Skip Portugal

Catarina Parreira, Adriana L. Fernandes, and Bráulio Alturas

Abstract   The theme of this study is the analysis of the advertising campaign "Can't Skip Portugal" launched in 2017 by Tourism of Portugal, which the main objective was to show all the regions of the country, covering not only the most known areas but also to promote other areas of the country, showcasing Portugal as a potential destination for tourists. The objective of the study is to understand how this kind of Digital Marketing can be sufficiently appealing and arouse interest in the viewers. To reach the proposed objective, a qualitative research of descriptive type was carried out. Throughout this study, it was possible to have a better understanding of the benefits of Digital Marketing. It could be concluded that the advertising campaign "Can't Skip Portugal" achieved its proposed goals, involving and influencing the target audience in the choice of Portugal as a touristic destination.

61.1   Introduction

This paper is based on the analysis of the Can't Skip Portugal advertising campaign launched in 2017 by Tourism of Portugal, which was created with the aim of showing all regions of the country, and it is divulging Portugal as a potential tourist destination, encompassing not only regions, as well as making new ones known.

Tourism of Portugal is a Portuguese public entity integrated in the Ministry of Economy. The purpose of Tourism of Portugal is to enhance and promote tourism in Portugal, with a commitment to contribute to its development, as well as its sustainability. In 2013, a new portal was launched, called Visit Portugal, which is available

C. Parreira · A. L. Fernandes · B. Alturas (✉)
Instituto Universitário de Lisboa (ISCTE-IUL), ISTAR-Iscte, Av. das Forças Armadas, 1649-026 Lisboa, Portugal
e-mail: braulio.alturas@iscte-iul.pt

C. Parreira
e-mail: cgpas@iscte-iul.pt

A. L. Fernandes
e-mail: adriana.fernandes@iscte-iul.pt

in ten languages, presenting a set of different functionalities in order to make the portal more interactive and improve the user's "browsing experience." The portal Visit Portugal was created "with the objective of strengthening the country's international tourism promotion and social networks, giving priority to mobility, interaction with the consumer and increasing the visibility of the tourism offer of companies" (translated). The platform has an interesting particularity, which is that the user can choose his destination through his state of mind.

Tourism of Portugal also points out that "the launch of this new portal is part of the national promotion strategy and aims to follow the new trends in tourism consumption" and to bet "on the proximity and ease generated by online and social networks" (translated).

The Can't Skip Portugal advertising campaign was launched through a set of videos released through digital platforms. Translating literally, Can't Skip Portugal mean "can't skip Portugal" or "can't pass Portugal ahead." It can be understood from this title that "Portugal is a must." The Can't Skip Portugal campaign is not only based on the videos launched and the promotional platform, but also on a concept that is transversal to display and brand activation.

The objective is to promote tourism in Portugal, attracting tourists and arousing emotions through the videos released. It is an international campaign, exclusively digital. The project aims to directly influence not only tourism demand and revenue growth, but also indirectly boost the profitability of companies operating in the tourism sector.

Specifically, this research focuses on the three main videos broadcast, which depict the experience of three foreign individuals who visited Portugal. Each video has an approximate duration of 3 min and a different audience. The scripts were written by Ivo Puris and Pedro Lima, and directed by Pedro Varela, telling the stories of Chloe, a young university student, looking for inspiration ("Can't Skip Inspiration"—https://www.youtube.com/watch?v=Vbo9a9D2dlk), Jack, a businessman, looking for freedom ("Can't Skip Freedom"—https://www.youtube.com/watch?v=1oJ04RovaGg) and Klaus, an elderly German man of 65 yr, looking for a new beginning ("Can't Skip New Beginnings"—https://www.youtube.com/watch?v=0oBxGtdDZJI). Chloe looks for new ideas in a city environment, Jacks decides to take a break to rest near nature, and Klaus looks for a new place to live. There are also three shorter videos, so-called teasers (reductions of the main videos that are intended to arouse the attention of the public) and two others that are a junction between the main video and the respective teaser. There are also loop videos of just five seconds with a few inspirational phrases, used for retargeting.

The main idea of this study is to understand how this kind of Digital Marketing can be sufficiently appealing and arouse interest in the viewers or the future benefits of the Can't Skip Portugal campaign investment. Doing the analysis of the campaign Can't Skip Portugal is essential to understand what goals were achieved and what impact on the choice of Portugal as a tourist destination.

The objective will be to understand the impact of the Can't Skip Portugal campaign in the choice of the country as a tourist destination, that is, to understand how advertising videos involve and arouse the interest of the target audience.

In order to obtain relevant conclusions, this paper will be developed based on the following objectives:

– To clarify the objectives of the campaign Can't Skip Portugal;
– To understand if the campaign reached the objectives for which it was proposed;
– To understand if the means of dissemination of the campaign were adequate;
– To understand if the target audience of the campaign considers the campaign attractive enough to feel like visiting the country.

The contribution of this study resides in the possibility of demonstrating to organizations working in the field of Digital Marketing and Tourism if this type of campaign is attractive, which leads people to share the videos, which makes the tourist attracted: the music? The images? The phrases? Or will it be other aspects? And do they learn anything about the country? Later, there is the possibility of using the knowledge generated by the study to focus efforts to create values that meet the tourists' desire and increase the visibility of these campaigns.

61.2 Literature Review

Technological advances in communication have caused significant changes in how companies communicate with customers, but also in how customers communicate with each other. With the emergence of new communication and information tools, all the inherent development has had a significant impact on marketing communication [1].

This new way of communicating online allows consumers to enjoy social networks to search for information about products or services, establishing comparisons, and sharing experiences [2]; that is, there is a greater ease in obtaining information. In general, the customer has become more demanding and more attentive, and for this reason, companies have also begun to have a greater concern in adapting their products to customer needs [3].

A previous study identified and clarified that service demonstration videos can be effective for participants who are less interested in and have less experience of, the marketed service [4]. However, another study shows that the efficacy of the video clip in persuading potential tourists to visit the destination differed according to the generation [5].

Marketing always aims to keep the customer informed by creating and ensuring that there is a relationship of interest between the customer and the company and its products, in order to keep the customer loyal to the brand and to help in its decision-making [6]. Following this objective, Digital Marketing intends, in a way, to strengthen and create a relationship of trust, creating strategies to engage the customer with the brand in a more direct way. It is therefore natural for companies to seek to become more attractive and responsive to customer requirements, telling the brand story more and more genuinely and creatively [7]. Marketing strategies are

changing fast as companies look for more customer-focused strategies and with the sense of building a virtually unique and unique relationship with each customer [1].

At the same time, the consumer has become more and more demanding, not only relying on the advertising from the direct marketing of the promoters but being significantly influenced by the opinions of testimonies collected about the product or service in question. They seek to obtain and validate information, both with friends and anonymous testimonies online. In this way, the bet on online promotion is a way to create connection and interaction with the consumer [8].

Social networks like YouTube or Facebook have been increasingly used as marketing tools [2], and the companies have begun to recognize the potential of social networking and information online. Social networks have become an opportunity to strengthen brands [9]. Social networks can influence the reputation of an organization, and so the relationship between the reputation of businesses and social networks is essential, since it influences the behavior of consumers [10].

YouTube is undoubtedly one of the most used social networks around the world, since "every minute that passes hundreds of hours of videos are sent, and every day people watch hundreds of millions of hours of video and generate billions of views by more than one billion monthly users" [11]. Also, for business, a strong presence on YouTube turns out to be fundamental since it allows to know the company's Web site and attract more visitors, just as in the end it will also have a successful digital strategy [11].

Initially, YouTube began by being a potential threat to media companies, much due to copyright policy, a concern that was quickly softened. In 2008, the media companies stopped facing YouTube as a rival, beginning to publish videos not only on YouTube, but also to share them on their websites. There was huge recognition of YouTube's potential as an advertising tool, which allowed content to spread faster. That is, leading media companies not only use YouTube for video streaming, but also as a potential channel for content distribution [12].

Social networks have come to be considered a useful tool for companies that, through them, find an opportunity to strengthen their brand, and get their message across. It is a fact that social networks have brought many advantages to companies as they can be used as an advertising tool, for sales and even customer support and market research, since communicating through a digital space is increasingly can be used to create digital connections with customers [9].

Tourism, one of the fastest growing sectors, has been influenced by these changes and is faced with a new type of customer, increasingly informed. Based on this premise that online information informs and influences the online customer, in 2013, Tourism of Portugal created a Digital Marketing strategy [13].

As Martins [13] explains, "instead of relying on a tour operator, the consumer chooses to plan his trip online, using digital platforms and social networks," in order to seek more information, establish comparisons, enjoy discount or even book, pay and in the end share the experience of his trip.

A different and evolving reality emerged, where individuals began to increasingly use social networks to obtain information or exchange impressions. This idea can be reinforced through a study carried out in 2013 to evaluate the satisfaction of tourists

who visited Portugal, with which it was concluded that around 36% visited Portugal on the recommendation of friends or relatives and that 22% made their decision based on information available on the internet. These were the main reasons that determined the choice of Portugal as a tourist destination, and so it was realized that something was changing in the tourism sector in Portugal, following the global trends. Therefore, in order to face new changes in behavior by tourists, Tourism of Portugal launched a Digital Marketing strategy in 2013, with the creation of the website Visit Portugal, official Web site to promote tourism in Portugal [13].

61.3   Methodology

The methodology used was a qualitative and descriptive research. Normally, in a qualitative research, one of the methods used is the group interview, in order to observe the behavior of the participant and then to deepen knowledge about the information obtained. As confirmed by Medeiros, Varela & Nunes (2017), in this type of approach "concepts are formulated and improved in the course of the investigation." These authors also describe the qualitative approach "as one that studies the external world, that is, it is not restricted to laboratories and experiments" [14].

The qualitative approach is generally used to understand participants' perceptions of a theme in order to analyze this information and generate some knowledge about it. It was above all for this reason that this approach was chosen, since the purpose of this research is to understand also the perception of the target audience when viewing the video, in order to understand their reactions. From this comes, the organization of focus group sessions.

The type of research is descriptive, with the data being analyzed in an inductive way, with a concern to identify subjective perceptions of individuals regarding the subject, objects, or stimuli given.

The purpose of the descriptive research is to describe or clarify characteristics of the group of participants in question, and therefore, a relationship is established between the questions to be asked and the object of study. When it comes to a descriptive research, as it is put into practice in this work, the researcher will conduct the interpretation and analysis of the study without interfering or manipulating the data.

The method chosen to achieve the objectives of this study was the focus group, a type of interview based on a group discussion about a theme, product, or service. It is a qualitative method, since it has no numerical measures, nor statistical analysis [15]. Morgan Silva (1996, 1997), quoted by Silva et al. [16], indicates that the focus group is "a research technique of collecting data through group interaction on a topic presented by the researcher" [16].

The purpose of the focus group is essentially to obtain a perception of people's reactions to a subject, focusing on the interaction between the group. From the discussion of the focus group, it is possible to extract some information, which is

then discussed and deepened. During the focus group, participants influence each other through their opinions or questions [17].

Based on this methodology, there was first contact with the organization Tourism of Portugal, which was available to provide some information about the Can't Skip Portugal advertising campaign, which contributed positively to the development of this work. Afterward, the focus group was carried out in order to analyze what the audience feels when they see the video (reaction); that is, how the videos awaken and involve the target audience.

The focus group sample is representative of the campaign's target audience. The focus group was applied to a group of participants of foreign nationality residing outside Portugal, between 21 and 35 yr of age. The focus group was thus carried out with three different groups, namely a group of 6 girls, a group of 6 boys, and a mixed group (3 girls and 3 boys). In the group of girls was shown the video of Chloe and in the group of boys the video of Jack, and in the mixed group was shown the previously mentioned junction.

The choice of participants from a young age group is related to the fact that the videos to be analyzed are intended for a young population. The participants work mostly in the area of marketing and sales, and some are still students who were, at the time of the study, to develop internships in the area. None of the participants were aware of the Can't Skip Portugal advertising campaign, nor had they visualized the video at the time of the study.

First, a brief presentation of the campaign was carried out, explaining in general the objectives of the focus group. During the presentation, participants were told that there was no interest in any opinion. An audio recording of each session was performed, and participants' permission was first requested for this recording.

At the beginning of each session, a sample characterization was made, where each participant was asked to present nationality, age, and job. Then the videos were presented in each of the sessions: female group, male group, and mixed group. After the participants had already visualized the video, the discussion session began where some questions were answered whose answers will serve to help answer the objectives of this work. As a conclusion of the sessions, a synthesis of the main points discussed, and clarification of the participants' doubts was made.

Initially, the audio recordings that had been performed were reproduced and then its contents were transcribed. After the transcription was carried out, a table was filled in which each question was placed per line, and 3 columns for each focus group session where the answer to each question was placed per line. In the end, it was possible to have a global perspective of the answers, moving to content analysis. Content analysis is a qualitative technique of data processing, which are then used to analyze the interviews conducted. Thus, the information is interpreted through systematic procedures seeking to extract or describe all the content. According to Cavalcante et al. [18], "the choice of this method of analysis can be explained by the need to overcome the uncertainties resulting from hypotheses and assumptions" [18], and this is a way of creating relationships that go beyond what was just mentioned when describing the content.

In this way, following the analysis of content, the main points of discussion were identified, which were the topics most covered during the interviews and which were the main opinions that resulted. Then, the same information was compared with the objectives initially defined, crossing the information and relating to the literature review, in order to understand and establish as many possible relationships and conclusions.

61.4 Analysis and Discussion of Results

According to the second research objective "to understand if the campaign reached, the objectives for which it was proposed" were identified the feelings aroused and if the video arouses interest in visiting Portugal.

It was identified that in terms of generally aroused feelings, the participants reveal that the video arouses a feeling of freedom, "freedom" was a word often used to translate the feeling that the video transmitted to them. They also reinforce the idea that the video is very motivational and inspirational, that they feel motivated and willing to start planning a trip. Also, the climate influences, this state of mind, mention that really this climate during the month of December becomes very appealing.

In conclusion, with respect to the climate, the objective was to show that the country can be visited at any time of the year and change the idea that exists associated with the winter. In this aspect, the goal was achieved. Overall participants say that the video does not arouse interest in visiting Portugal; specifically, they indicate that it conveys a motivational message but does not influence them to visit Portugal, because they consider that the video is very generic and does not show enough about the country. Participants showed interest in Portugal, but based on ideas they already had, many said they wanted to visit, but that this video was not decisive for their decision.

Here, too, it can be related to another aspect that has also been dealt with in the literature review, the fact that new forms of online communication have emerged, which are increasingly intended to create a relationship between the viewer and the brand, of social networks, Web sites or others, in order to encourage the viewer to want to know more [19]. Here the same question may have arisen, since the videos do not show information, which will somehow "oblige" the viewer (and possible visitor) to search more and for this the campaign support Web site was created.

According to the literature review, it is possible to conclude that the popularity of video as a rule is associated with the number of views and shares [20]. On the other hand, it was also found that there is a relationship between the number of views and the duration of the video. The average of videos published on YouTube in 2014 was 4.4 min, which means that their duration is shorter [20], so it is within normal parameters. Yet it is possible to assume that teasers, for their short duration, have more public support.

It can then be concluded that the video does not represent the Portuguese culture from which the participants had an idea. However, considering that the purpose of

Portugal's tourism was to show another perspective on the country, passing through more and less known areas, it can be admitted that the objective was achieved, because the videos have indeed aroused some concern and curiosity about the country. Another aspect that may also be related to the fact that the consumer has become more demanding in the sense that he has a more critical opinion, because he is more informed and hence also take a more critical look [8].

As was also quoted in the literature review, Portugal is recognized for its "climate of excellence, friendliness, and good gastronomy" [21], which also goes against what viewers have said about the video.

Finally, about the attractiveness of the campaign, we analyzed the characteristics that the participants consider most appealing, the quality of the images and the soundtrack.

The characteristics that the participants consider most appealing in the video are the weather, the beaches, and architecture. In this way, you can extract the strengths of the videos or the aspects that the participants have retained from the video. Just as Portugal has several aspects that pay in its favor, such as landscapes, which make it very attractive [22]. It can thus be seen that some of the strengths of the country were transmitted through the videos and captured by the participants.

61.5 Conclusions

We can conclude that, in general, all participants have an interest in Portugal and those who have not yet visited have expressed this intention, but indicate that it is not directly due to having seen the video, which had little relevance to the hypothetical planning of such a trip. In addition, they have actually learned something about the country. The features that most aroused attention during the video were mainly the weather (the sun in particular), architecture (also mentioning beautiful buildings), beaches (the beauty of waters), and surfing. All participants agree that the quality of the images is satisfactory, and the images are beautiful, creative and have a good editing.

It can thus be considered that this video is successful in the mission to arouse interest in the participants, although this interest does not refer directly to a future visit to Portugal. Participants recognize that the video is interesting, has beautiful landscapes, and makes them feel freer and more willing to plan a trip. However, it is consolidated by the opinions of the participants throughout this analysis that this video does not demonstrate the Portuguese culture. Thus, campaigns of this kind could have more scope if they were comprehensive of the much more that there is to show in Portugal, aspects such as the music and the gastronomy so characteristic of the country. They also indicate that the video does not have much information, by not indicating the names of the zones that are being shown. In fact, the fact that it is only indicated at the end that this campaign is about Portugal is another risk factor for reaching it. The fact that it had no link to the campaign did not allow the

participants of this study, nor the other public that contacted the campaign to obtain directly enough/relevant information to plan a trip to Portugal.

This study then shows that the Can't Skip Portugal campaign is attractive. The viewers identify relevant characteristics in the video, consider the high-quality images and the music, although the opinion is not consensual about the choice, it can be understood that it is motivational and being one of the objectives of the campaign, it is concluded that the objective it was achieved. Regarding the means of dissemination of the campaign, it was considered that the duration of the videos was very long and that the video did not represent the Portuguese culture that the participants lived or hoped to find. Based on the objectives previously defined by Tourism of Portugal, it can be concluded that the campaign has good means of dissemination, since a set of teasers were created for each video and that a Web site was also created to support the campaign. This way, although the videos do not show any link, it ends up arousing interest in knowing more and this information is possible to find in the campaign website.

In short, it can be concluded that the campaign corresponds positively to the objectives for which it was proposed. About the objective of understanding whether the campaign achieves the objectives for which it was proposed, it can be said that yes, since the video is appealing and can reach the more emotional side of the viewer. On the other hand, although the video does not arouse interest in specifically visiting Portugal, it ends up being able to create a relationship with the viewer, from the motivational point of view, which is clearly one of the objectives of the campaign.

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Chapter 62
Understanding the Value of Digital Marketing Tools for SMEs

Elisabete Paulo Morais, Carlos R. Cunha, and Arlindo Santos

Abstract Digital marketing is gaining predominance in marketing strategies across the globe. Digitization is becoming more and more present in business, not just changes in consumer behavior, but the adoption of new technologies, tools, and applications is highly disruptive, with immediate impact on the business of all companies. The common link between digital marketing definitions is the use of tools, namely online tools. One of the biggest changes in human interaction is the recent proliferation of online social networks. Rapid growth of Web-based platforms that facilitate online social behavior has significantly modified the nature of human activities, habitats, and interactions. Real-world social relationships have been migrated to the virtual world, resulting in online communities that bring people together from across the globe. This study aims to identify and describe the various digital marketing tools and which of these can be used to increase the SMEs competitiveness.

62.1 Introduction

Digitization is becoming more and more present in business, not just changes in consumer behavior, but the adoption of new technologies, tools, and applications is highly innovative, with immediate impact on the business of all companies.

The digital revolution has changed the way consumers perceive business strategies. From the age of finding out the day's events on the morning newspaper, to instant gratification with updates from social media, people's perception has been shaped by a technology based bubble, whose access is limited to a digital platform [1]. Consequently, businesses have implemented strategies that are carried out in that media platform to provide an interactive, focused, and measurable way of reaching consumers. This strategy is commonly known as digital marketing [2].

E. P. Morais (✉) · C. R. Cunha
UNIAG (Applied Management Research Unit), Instituto Politécnico de Bragança, Campus de Santa Apolónia, 5300-253 Bragança, Portugal
e-mail: beta@ibp.pt

A. Santos
Instituto Politécnico de Bragança, Campus de Santa Apolónia, 5300-253 Bragança, Portugal

Digital marketing creates opportunities to develop successful businesses in a way that previously was not possible for small companies [3] and is becoming an increasingly important source of competitive advantage in both business-to-business and business-to-consumer markets [4]. The existing literature shows that digitalization in all its variations are connected to small businesses' growth, performance, and competitiveness [5].

There are several authors defining digital marketing. The common link between digital marketing definitions is the use of tools, namely online tools.

Rapid growth of Web-based platforms that facilitate online social behavior has significantly modified the nature of human activities, habitats, and interactions. Real-world social relationships have been migrated to the virtual world, resulting in online communities that bring people together from across the globe. This movement into the digital dimension allows individuals to share knowledge, entertain one another, and promote dialogues among different cultures.

Digital marketing tools (DMT): It involves all the digital marketing tools.

The question is: What kind of digital marketing tools are small and medium enterprises (SMEs) ready to use in digital campaigns?

It is the purpose of this chapter to identify and describe the various digital marketing tools and which of these can be used to increase the SMEs competitiveness.

62.2 Background

Numerous researches targeting digital marketing and social media channels are currently being conducted in order to display how companies can build their brand awareness, attract consumers, and obtain new projects.

A quantitative study to determine how messages from Instagram influence users was conducted [6]. His purpose was to determine certain patterns to help marketers create engaging content. It is difficult for companies to develop effective content in marketing campaigns, which is essential in engaging consumers. In his research, [7] performs a qualitative analysis to determine key factors in adopting a marketing strategy for a start-up. The author uses focus groups to find the views of marketing specialists. Today for SMEs, online marketing is an opportunity to build strong customer relationships, as highlighted in Nikunen's study [8]. One issue is to maintain these long-term relationships. The researcher analyzed the degree of understanding of strategies for DMT used by small companies. An individual analysis of various marketing tools is carried out by Camilleri [9] to boost awareness of a company's products and help build a general marketing strategy. Thus, according to his research, it is proposed that managers should keep in mind the market, mission, measurement, resources, media, and objective. The use of Web sites and social networking by people has led companies to focus on developing relationships with consumers [10]. Within it, the social networks and the defining characteristics of each are detailed and an approach to social marketing tools is explored. Wilson and Makau [11] interviewed 110 people responsible for marketing in SMEs to see their knowledge of

digital marketing. He found that although most use them, they are not used at full capacity due to limited capital. He recommends through the results that these companies should consciously decide on online platforms and have a structured plan and comply with it. In his study, Iankova [12] explains the differences between the use of social networks by B2B and B2C companies. The analysis made shows that B2B use these social means for a global effect. A scale for new resources is being developed and theoretically validated by [13]. He determines the social resources that are characteristic of the media and have an impact on social media marketing and brand performance. By conducting a test, it is highlighted that this social media strategy is important for small businesses, as others focus on social network scanning and social media availability.

Qureshi and Syed [14] propose an environment in which the relationships between basic variables: brand equity and social media marketing can develop.

In a study developed in Romania [15], want to determine if companies in Bucharest use digital marketing and on which online promotion methods they emphasize and prioritize when marketing strategy is drawn up. At the same time, it is desired to find out which of these has led to a competitive advantage in a growing market. Thus, they distributed a questionnaire to the companies in Bucharest between May and June 2018. This was answered by the people who are part of the marketing department if it exists, or by the people who are in charge of promoting the company online otherwise, to collect relevant data. After analyzing the data collected through the questionnaire, the following conclusions were reached regarding the use of digital marketing channels and their role in achieving the competitive advantage: The results are relevant, especially at the micro-enterprises level, which dominates with 62.5% in this survey; the data obtained are up to date as most respondents argued that SMEs owned or for which they were working were set up between 2010 and 2018, being young and modern. Thus, the conclusions obtained will help in formulating future marketing strategies; the popularity of using digital marketing channels is confirmed, as 95% of respondents chose to answer affirmatively the question "Does your company use digital marketing channels as part of the promotion strategy?"; The marketing channel in which SMEs choose to invest the largest share of the marketing budget is the Web site, at 75%, it is vital at the moment for a company to own a Web site.

A theoretical framework developed by [16] for a digital marketing innovation model proposal. It was based on a documentary, exploratory, descriptive, correlational, and transversal research (academic vision). Thus, it was applied a focus group study using Panel Delphi and analytic hierarchy process among the specialists of digital marketing sector (expert vision) to identify different variables and indicators, registering their different importance rates as well as the order of occurrence of each one into the digital marketing innovation model proposal construct, for both visions. The final digital marketing innovation model proposal construct was correlated with the competitiveness model of Mexico, previously known. Subsequently, a pilot questionnaire, with a test of validity and reliability, was applied during the period of January–April 2017, to 400 specialists related with digital marketing and

competitiveness (200 SME experts, 100 consultants, and 100 academics). As a quantitative stage (empirical evidence), multiple linear regression and correlation techniques were applied to determine the relationships in this model. It was obtained an original and generalized model, able to explain the relationship of variables and indicators involved among 8 variables of the competitiveness model of Mexico and 10 variables of the digital marketing innovation model proposal as a measuring tool, and final suggestions for the improvement of such relationship.

According to [17] scholarly literature suggests digital marketing skills gaps in industry, but these skills gaps are not clearly identified. They find that a lack of specific technical skills, a need for best practice guidance on evaluation metrics and a lack of intelligent futureproofing for dynamic technological change and development are skills gaps currently challenging the communication industry. However, the challenge of integrating digital marketing approaches with established marketing practice emerges as the key skills gap.

An exploratory research developed by [18] aims to support the Mexican context knowledge through the observation to Web sites of SMEs with digital trust seal. The digital resources used as part of the marketing mix that can be observed externally in the Web sites were analyzed. The results showed that the most used resources were social networks, email, those related to navigation ease and the variety of payment options. Despite showing a high interest in social networks, a quarter of the firms with a Facebook page did not give maintenance to it. They concluded that Mexican SMEs are still at a basic stage in the use of digital resources in the marketing mix and that the marketing mix model is useful to observe the digital resources, but that some resources may belong to more than one element of the mix.

Social media acts as a giant tool for the enterprises including SMEs to improve their business. Social media impacts on the business of enterprises. There are different studies where contribution of social media has been discussed toward business activities of organizations. Use of social media platforms helps the SMEs in various directions. Even attempts are being taken to explore the potentiality of this platform for improving Supply Chain Management.

62.3   Digital Marketing Tools

Internet marketing has been described by [19] simply as "achieving marketing goals through the application of digital technologies," and [20] define that Internet marketing is also referred to as online marketing, web marketing, e-marketing, and it is the selling of products or services over the Internet, which includes the use of a company Web site in conjunction with online promotional techniques such as banner advertising, search engines, pay-per-click (PPC) advertising, email, and links or services of other sites to achieve new customers. According to [21] cited by [22], the activities associated with this area began with the advertising boom, and the first versions of search engine optimization (SEO) in 1995, and today, it is a generic term

for email marketing, SEO, social media marketing (SMM), PPC, display ads on Web sites, gaming advertising, search engine marketing (SEM), call to back, etc.

Today we are seeing a tremendous opportunity to directly reach niche markets at low costs, and where any business, independently of size, can reach its target market through digital marketing strategies, and without large budgets [23]. The enterprise needs to find the best and most appropriate digital marketing tools (DMT) like newsletters, social media, online banners, and blogs. And, with the emergence of new technologies, new business opportunities have emerged for marketers, such as managing Web sites to achieve business goals [24]. With the advent of Web 2.0, blogs have emerged as tools that have successfully created an impact to increase sales revenue, especially for products where customers can read reviews and write comments about personal experiences. For companies, online reviews also worked very well as part of their overall strategic marketing [25], and social media tools allowed them to promote products and services. This is only possible if marketers are aware of using communication strategies to engage customers and improve their experience [26], and understand how to do it effectively with performance metrics.

The Internet gives to consumers the control like never before and offers an unprecedented set of tools, techniques, and tactics that enable marketers to interact with those consumers [27]. The tools continue to grow and the options available are immense, and the complexity increases. Using each tool makes no sense without a strategy, a plan, a model that helps the marketers stay focused and ensures that marketing activities are always aligned with business objectives. Several researchers present a set of guides, templates, and models that help with this growing complexity management. According to [28], there are so many different tools and tactics available that it is hard to know where to start. To understand the complexity of the different digital channels, [29] presents a classification model based on the point of view of the control entity (the company or the user), and the communication is unidirectional or bidirectional. Web sites and email can be seen as examples of one-way online tools with high control by the company. Email can be used for various marketing purposes including sharing information, promoting, building, and maintaining relationships and generating traffic to Web sites. Although email is a two-way communication channel by nature, it is often used as a one-way channel for delivering newsletters or announcements. SEO is also a one-way communication strategy that aims to improve rank on search engine result page (SERP) for organic search related to some keywords. And the rise of social media tools has changed the rules of the game where the power shifted from marketers to customers. The essential nature of social media requires that a company's marketing takes the form of two-way communication with customers, and the company has less control. Thus, in this context, the blog is presented as a good relationship tool and many large companies have adopted the blog as part of their routines.

The model called RACE was introduced by Dave Chaffey [28] to help digital marketers plan and manage their activities in a more structured manner. Essentially defined in this framework are four steps (Reach, Action, Conversion and Engage) of engagement during the customer lifecycle, with the goal of engaging with customers or potential customers, and creating leads. These interactions can occur

across multiple channels and touchpoints, such as on the Web site, via smartphone, social media, via email, etc. Reach involves awareness of the brand, products, and services at different non-company touchpoints to drive traffic to the organization's Web site or to the organization's social media pages. The second step (Action) is to encourage interactions to generate leads and persuade visitors or potential customers to take the next step (Conversion), which is to convert the lead into a customer. In the last step (Engage), the organization should make a long-term commitment with the costumers in order to generate loyalty.

In [30] present a set of DMT that build customer relationships. These tools are grouped at different stages of the customer journey. The first phase is concerned with the goal of attracting customers and persuading customers to take additional action, such as visiting the Web site. It suggests that one of the most beneficial tools in applying this strategy is SEO. The next phase focuses on engaging customers to be an active element in communication. The adoption of strategies through content marketing and e-commerce can be used as a tool to create interest. Subsequently, in the third phase, it is necessary to retain customers and create strategies for them to return to the company's Web sites. And to preserve constant communication, it is necessary to build relationships with customers. Learning customer preferences corresponds to the fourth phase. At this stage, one is expected to collect information about current and potential customers, for example through online surveys or data collection from web analytics tools. The fifth phase requires strategies that aim for ongoing customer communication through building individualized customer relationships; email and use of social networks are examples of digital tools.

The Internet can be perceived to be formed through different versions (Web 1.0, 2.0, and 3.0) that represent the evolution of the World Wide Web. And along this line, [29] argues that digital marketing can also operate at different levels that serve different results on different channels (Web site, email, social media, advertising and evaluation/monitoring). These three levels are named as: (1) being present, (2) meeting customers online, and (3) serving customers online. Being present can be seen as the basic level of digital marketing that can be understood as unidirectional online communication, providing Web 1.0 options, which aims to inform customers about the brand and product offerings, similar to traditional marketing. The second level implements the idea of Web 2.0 and the interactive possibilities that a digital environment provides through the use of blogs, social media, etc. The third stage aims to create automation marketing strategies and custom Web sites, where the computer is yet another actor that is part of a two-way communication with customers, reaching a significant hands-on level of understanding of customers.

The conceptual model proposed by [31] includes several phases. In the first phase, one should stick to taking advantage of the concept of big data and using analytical tools to perform the tasks related to data collection and information analysis to increase knowledge. The second phase includes all elements related to effective online presence, use of social networks and creation of modern and responsive updated Web sites, applications, etc. The third phase consists of using the tools, among which SEO, PPC, SMM, Google Ads Words campaigns. The fourth phase relates to topics regarding some of the micro- and macro-level factors, and it is

essentially a reflective concern that contains extremely sensitive issues such as market competition and market power. The fifth phase emphasizes the end result of increasing brand value as a premise to ensure growth and building long-term sustainability.

62.4   SMEs Competitiveness

Today the competitiveness of organizations depends on many factors that have long extended beyond the narrow view of the intrinsic quality of the product and its production costs. It is in the ability to read, influence and anticipate the market that lies the overwhelming part of business success. To meet these new challenges, marketing, and specifically DMT, has revolutionized the way in which innovative communication strategies can be implemented and therefore—competitiveness.

Competitiveness is based on a diverse set of aspects. The development of new products that are innovative or better suited to consumer needs; the maintenance of communication channels with consumers that permanently bring organizations closer to their customers; the inclusion in the product of characteristics that allow added value to the product, going beyond its basic functionality; obtaining feedback on the degree of customer satisfaction. This whole set of perspectives is increasingly important for business competitiveness nowadays. In this domain, where marketing plays a major role, the use of Information and Communication Technologies (ICT) is undoubtedly a catalyst for competitiveness, and according to [32], there is clear evidence that the ICT sector may be a positive driver to influence enterprise competitiveness. In a world changing fast, if traditional marketing practices are unsuitable for SMEs, enterprises must unlearn traditional approaches and replace them with new innovative ideas and course of actions [33]. ICT is having a crucial role by supporting a marketing reengineering that is contributing to the increase of SMEs competitiveness. There are many studies that show how ICT is bringing competitive advantages to enterprises; a study carried by [34] concluded about the importance of using marketing innovation tools that allow enterprises to achieve a competitive advantage and to penetrate new market segments by reaching consumers' preferences. In a [35] study, focus on green marketing, it is highlighted that technological tools can help companies to better target consumers. With the development and widespread of Internet, online marketing tools are an integral part of e-commerce [36] and shape the way enterprises present themselves to clients and also all their communication strategy dynamics.

According to [37], the Internet allows SMEs to access and has the presence in markets helping them to compete against industry giants, changing the face of marketing reaching in a fashion-personalized way to a global audience. However, [38] refers that some studies show that SMEs may lack competence and show an inability and slow response time for adopting innovative approaches for interaction with customers. Still, the use of ICT is a fundamental enabler and also a vital driver to the development of new marketing strategies to boost enterprises competitiveness. There are several examples in the literature that confirm it. According to [39], the

advances in marketing will probably be built from advances in ICT and improvements in managing information about customers. In [40] suggest that marketing capability bridges the association between Customer Relationship Management (CRM) technology use and performance stating that marketing capability is a mediator between CRM IT use and performance. The saying "If a business can't be found on Google, it doesn't exist" seems to explain consumers' behavior today. SMEs should understand that the use of digital channels is of the upmost importance for brands, and it must be a progression that SMEs must also adapt to if they want to stay competitive and grow in the future [29]. Some authors question how social media and digital marketing can contribute so SMEs ability to compete concluding that it can strongly contribute to the increase of competitiveness when SMEs merge the traditional strategies with new digital ones [41]. Others studying the importance of SEO, conclude that it is directly correlated with the page hit ratio and frequency of hits, being a crucial tool that play a significant role for that Web sites reach the consumer [42]. According to [43], content marketing contributes to more engaged audiences and reduce marketing cost, consequently diminishing the need for advertising or personal selling activity [44] studies how Indonesian SMEs use social media networks like Facebook and Twitter for their business, concluding that the adoption of social media networks can successfully be used for supporting business and increase competitiveness [45] also have evidence of the importance of social networks in an exploratory study to determine the impact of social networks on the innovation potential of Romanian SMEs. In a study, [46] focusing on Chinese SMEs, state that managers can use blogs to access tacit knowledge through the rich media aspects of social networks systems. Various studies in the field of using DMT in SMEs show the importance that technology has had in shaping the way marketing operates. In this evolutionary process, the technological tools that have been developed to serve marketing have contributed to the development of new strategies that have decisively contributed to increase the competitiveness of organizations. SMEs have an opportunity to increase their competitiveness at reduced prices through the use of DMT. In Table 62.1, the study presents the tools that can be used at reduced or zero cost, which will increase competitiveness, according to the authors mentioned. Each of these tools can be used at different stages; however, the use of all of them is very pertinent.

Table 62.1 Digital marketing tools to increase the SMEs competitiveness

Recognized digital marketing tools	Authors
Web site	[8, 15, 18, 29, 30, 41, 44, 46]
Facebook	[8, 15, 16, 23, 25, 30, 40]
Email	[8, 15, 16, 22, 23, 25, 29, 30, 35, 40]
Search engine marketing	[8, 15, 26, 30, 35]
Blog	[16, 23, 25, 29, 30, 45]
Content marketing	[8, 15, 30, 35, 42]
Search engine optimization	[9, 16, 24, 28, 31, 32, 43, 44]

62.5 Conclusion

ICT will increasingly have a marketing support role and will be a force for innovation and competitiveness of modern organizations and a survival-enabler in a market of innovation and mutation.

The study identified a set of DMT (Web site, Facebook, email, Search Engine Marketing, Blog, Content Marketing, Search Engine Optimization) that can easily be used by SMEs to increase competitiveness.

DMT clearly contribute to the competitiveness of SMEs; however, we can analyze each tool from two perspectives: in the first and more technological perspective, each tool is the focus and starting point of the process that efforts on its characterization and then identifies the right moment for its use and the way it is used; in the second perspective, we take the marketer's view, that is, the focus is on the plan and customer buying cycle, and for each phase identify the right tool to help achieve the marketing objectives. Both of these perspectives have identified the problem, which is related to the speed and complexity of the digital tools that we have available today in the market, and which makes it difficult to integrate them correctly into the marketer's functions to (1) draw the plan, (2) operationalize the plan, and (3) evaluate the results. Today, the marketer must have a strategic, operational and more technological vision to be able to be aware of the speed and complexity that is now a constant.

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Chapter 63
Using Google Trends for Measuring the Influencer's Impact on the Demand in Tourism and Its Limits

Zuzana Kvítková📧 **and Šárka Masárová**

Abstract Influencers are the new phenomenon of modern marketing. Many companies invest a significant part of their budget into influencer marketing, and some of them are still looking for a way of measuring the effects. Especially destinations, as they do not sell any product, can see and measure the effect very problematically. Some other companies are in similar difficulties because of the length of the decision-making process in the tourism business. One of the most important social networks is Instagram. Instagram is also probably the most popular social network in tourism because of the role of the pictures. Therefore, influences who are active on Instagram—Instagramers—and their campaigns are objects of the research. The aim of the paper is to verify or reject the appropriate use of the proposed method of measuring the impact of the influencer marketing on the demand in case there is no product to be sold (case of destinations) and to identify limits of using Google Trends. Based on an analysis of 10 campaigns, the effect on search term popularity was measured with statistics from Google Trends. All the campaigns were in the Czech language, targeting the Czech travel market. Based on the results, the limits of the method and usage of Google Trends are identified.

63.1 Introduction

The tourism is a constantly growing realm and the number of tourist's arrivals reached the number of 1.4 billion in 2018 [1], which represents a 6% growth, and continued growing in 2019 by 4% to 1.5 billion [2]. In 2020, the trends have been stopped by the COVID-19 pandemic and the UNTWO expects 30% decrease in international tourist arrivals [3]. This situation is a challenge for smaller destinations and one of the ways, how to inform and attract tourists is to invite an influencer. The live experience will be even more important not only to show the beauty of the destination but also to prove the safety, responsibility and comfort.

Z. Kvítková (📧) · Š. Masárová
University of Economics, Prague, Czech Republic
e-mail: lechnyro@vse.cz

Tourism destinations are kind of "business units" on a highly competitive market, and thus, they should be managed and promoted. Social media and especially social networks as one the most important platform of social media are commonly used marketing communication channels not only for the brands but for destinations as well. In combination with content marketing strategy, it represents an important tool of inbound marketing, for creating trust and relationship between brands and customers.

63.1.1   Influencer Marketing

Social media is defined as "applications, activities and behaviours that are carried out to share knowledge and ideas through the interactive media that enables the creation and sharing of words, pictures, videos and sound among online groups" [4]. A social network is a type of social media; however, the main purpose is to "enable users to connect by creating personal information profiles, inviting friends and colleagues to have access to those profiles, and sending e-mails and instant messages between each other. These personal profiles can include any type of information, including photographs, video, audio files and blogs" [4].

The companies, brands and destinations create their own blogs, pages on social networks, content, use paid promotion and communicate with their customers and public. But there is also another way of how to get attention on social media—cooperation with an influencer. Influencer marketing is a phenomenon in the last years and is supposed to be a very effective way of targeting new customers and increasing brand awareness and trust. In 2018, the number of posts posted by influencers increased by 39% [5] (and by 198% in 2017) [6]. Carter [7] defines influencer marketing as cooperation with social media users who are considered to be influential and through content spread can promote products or increase brand awareness. The Czech and international literature brings several definitions of an influencer. The common and repeating characteristics are the following: (1) a person who is active on social media, (2) has the power to influence the behaviour of followers and their attitude towards brands.

There is a need to say, that influencer marketing is a new term but not a new tool. Many brands used to cooperate with opinion leaders and use their influence for their marketing purposes. An opinion leader is a person, who is able with own behaviour, information and recommendations influence the behaviour of others [8]. Opinion leaders are often various celebrities—pop stars, politicians, sportsmen, experts, etc. Some of these celebrities kept their influence even in the online environment and became influencers. Glover [9] identifies the benefits of celebrities as influencers and mentions that celebrities add credibility, increase ad recall and brand recognition, catch more attention. For destination, a celebrity endorsement is an excellent opportunity to increase brand awareness among the general public and create an image in synergy with the personal image of the celebrity. On the other hand, for some customers or travellers, it can be difficult to identify with the celebrity and

prefer a recommendation from a friend or an ordinary (wo)man. And here the so-called grassroots influencers come—ordinary social media users who created a large community of followers thank to the interesting content. Showing everyday situations from their life, sharing tips, reviews, etc., in an attractive form with a personal touch enables to create the relationship, illusion of friendship. The main value of the "self-made" influencers is the authenticity and trust of the followers [10]. For followers, it is easier to identify with the influencer and accept the recommendation for their own lives.

According to new global research study, the main important reasons for using influencer marketing are: (1) better brand advocacy, (2) increasing brand awareness, (3) targeting new audiences, (4) increasing share of online presence and (5) improving conversion rate [11]. Depending on the brand, the goals of the cooperation and budget, the companies should choose the right category of the influencer. There are several categories of influencers: (1) micro-influencers have more 500–10,000 followers, (2) macro-influencers have 10,001–1 Mio. Followers and (3) mega-influencers have more than 1 Mio. Follows [12]. Davey [13] creates one more category—nano-influencers with between 100 and 1000 followers. As the disclosure of paid promotion is required, the followers are more careful what are they going to trust and accept as authentic. This is one of the reasons, why micro-influencers are discussed and often preferred. According to the findings of Klear's analysis, 84% of posts are posted by micro-influencers [5]. They are supposed to have a higher impact on the behaviour of their followers, as the community is smaller, but closer to the influencer or more engaged in the presented topic and therefore more relevant to the brand or product. Influencers are active on various social media and we talk about YouTubers, Instagramers, bloggers, etc. Many of the influencers are active on more platforms; however, one is usually the primary one.

63.1.2 Influencers in Tourism Marketing

Destination marketing is a strategic tool of destination management that serves to promote the destination and the right product at the travel market. Importance and potential of influencer marketing in tourism is based on the significant source of information and inspiration—word-of-mouth. In the world of the Internet, friends and relatives are accompanied by other social media users who talk about destinations and share photos, including influencers. Travel influencers are specialized in the travel topics; however, for many destinations and holiday types, any influencer, including celebrities, can be useful. Especially in the Czech Republic, there were no influential bloggers, YouTubers, etc., specialized in travel for a long time. Therefore, other influencers were asked for cooperation and the most important criteria were the appropriate target audience. Today, there are important Czech travel influencers and influencers with worldwide scope and hundred thousands or even millions of followers (e.g. Scott Eddy, helloemilie, earthpix). The significant impact of social media for tourism industry illustrates the study of Stacla (2017), where 43% of

consumer (and 57% of millennials) made travel plans based on a post shared by their friends [14].

There are several types of cooperation of the destinations and influencers. The simplest way of cooperation is to invite the travel influencer to the destination and pay the expenses. The visit can be also part of a larger campaign (e.g. Instagram Audit in South Bohemia, where 12 Instagramers created together 178 photographs, more than 1 h of IG stories, got 250,000 likes and gain more than 650,000 views [15]). The influencers get giveaways, promote contests and competitions, visit events in the destinations, etc. The cooperation with destination used to be based on a free stay in the destination. As the travel influencers become more and more professional, even the destinations have sometimes to pay for promoting. The situation in the hotel business was similar; however, the interest from the hotel side created a demand for the influencers´ services high enough and payments or various bonuses are almost a must, especially for ordinary hotels.

Instagram with 1 billion active users in April 2020 [16] is the third most popular social network after Facebook and YouTube [17]. Instagram was also the most important channel for influencer marketing in 2019 [18]. For tourism destinations, Instagram is an important communication channel because of the visual presentation. The message receivers remember 80% of visual information in comparison with 20% textual information [19]. The travel industry is the fourth top industry in cooperation with influencers according to number of Instagram posts [5] (moved from 6th position in 2017) [6]. For some nations (especially for Asian tourists), a nice picture for Instagram is a significant motivation to travel to a particular destination and visit a particular place.

With the growing tourism, for many destinations, a new task occurs—not only to promote the destination itself but to create the right communication mix and product strategy, to manage the tourist concentration at the most famous places and spread the interest to other places as well. With this, the influencers can help to show the beauty and genius loci of unknown places and unbeaten paths. However, the destination management companies also need feedback, how effective their communication strategy is and not only them. This is one of the main issues of the evaluation of the communication, how to measure the effect if there are no sales to calculate the conversion rate or if the time gap between decision and communication is too long. There are several KPI's that can be measured: (1) reach, (2) engagement rates, (3) click-through-rate. These metrics, however, measure the results of the communication on the used platform, but not the effect on consumer behaviour and the demand. Therefore, a tool and a method were suggested, and further in the paper, their limits are identified.

63.1.3   *Google Trends and the Proposed Method of Assessing the Influence of Influencers*

Google Trends is a specific search tool owned by Google that provides an overview of how popular a term is in a given period of time. Google Trends does not show absolute numbers. The data set is normalized and represents a searched amount as a proportion of all searches on all topics on Google at that time and location. The search term popularity is represented by a scale from 0 to 100. A value of 100 represents the highest popularity of a term in the time period and a value of 50 means that the searched term was half popular. If the scale is marked with 0, the search term was not sought at all or at least, and thus, not enough data was collected. [20].

The base of the proposed method is a calculation of the cumulative popularity in each period and its comparison to a related time period. The main keyword of the campaign is chosen, and its cumulative popularity is measured. The immediate, short-term and long-term effect of the campaign should be calculated. A percentage change as a result of the campaign is calculated in the following equations. Equation (63.1) propose the calculation of the immediate effect.

$$\left(\frac{\sum \text{popularity during the campaign (X days)}}{\sum \text{popularity before the campaign (X days)}} - 1 \right) \times 100 = \% \text{ change in poularity}$$

(63.1)

Similarly, the short-term impact is calculated. In tourism, short-term is usually taken as maximum 3 days; therefore, also this methodology calculates the cumulative impact in three days after the campaign had been finished.

$$\left(\frac{\sum \text{popularity 3 days after campaign}}{\sum \text{popularity 3 days before the campaign}} - 1 \right) \times 100 = \% \text{ change in popularity}$$

(63.2)

And last, the change in long-term popularity is evaluated. The cumulative popularity during the 4–13th day is calculated and compared to the cumulative popularity in 10 days before the campaign.

$$\left(\frac{\sum \text{popularity 4th} - \text{13th day after campaign}}{\sum \text{popularity before campaign (10 days)}} - 1 \right) \times 100 = \% \text{ change in popularity}$$

(63.3)

63.2   Materials and Methods

The aim of the paper is to verify or reject the appropriate use of the proposed method of measuring the impact of influencer marketing on the demand in case there is no product to be sold (case of destinations) and to identify the limits of using Google Trends. An empirical method was applied.

The method was applied to 10 campaigns, and the results were analysed. For this research, Instagram as a research object was chosen. Several campaigns on Instagram were selected in which Instagramers were promoting the travel destination. The campaigns aimed to promote a destination, accommodation facility or tourist attraction. Selected campaigns took place only in the Czech language through Czech Instagramers. It can, therefore, be assumed that the campaigns targeted mainly the Czech travel market. For each campaign, the campaign duration was determined based on the date of the first and last published Instagram post related to the destination. Geotags, hashtags or a caption for a photograph were used to determine the name of a particular destination or tourist attraction. The list of the campaigns is presented in Table 63.1.

Table 63.1 Overview of the analysed campaigns

Campaign	Number of posts	Campaign start	Campaign end
Pyskočely	11	7th November 2018	9th November 2018
České Švýcarsko	12	1st October 2017	6th October 2017
Chalet Eisner	4	21st March 2019	24th March 2019
Skog Harrachov	10	3rd July 2018	6th July 2018
Nassfeld, Austria	10	23rd January 2019	28th January 2019
Penzion Zikmundov	6	17th March 2019	17th March 2019
Chata Hradečanka	17	25th December 2018	31st December 2018
Chalet in	3	17th January 2019	22nd January 2019
Dobčické rybníčky	2	1st April 2019	2nd April 2019
Resort Mlýn Černovice	6	23rd February 2019	25th February 2019

For every campaign, one search term was determined based on the name of the destination, accommodation facility, or a tourist attraction in the destination that is the main topic of the campaign. The time period for data examined from Google Trends is set to the campaign duration plus 10 days before and 14 days after. This time period was chosen according to the proposed method.

In the text several limits of the method are identified, statistical analysis is applied to confirm or disprove the significance of the limit that is not possible to control and eliminate.

63.3 Results

A keyword for each campaign was selected and its popularity was examined. Two examples of the development of keyword popularity are shown in Figs. 63.1 and 63.2. The awareness of the public about Pyskočely is very low, and the effect of the influencer campaign is significant.

The second example in Fig. 63.2 is the destination Nassfeld. Nassfeld is an important winter destination in Austria, and the awareness even in the Czech Republic is much higher. The effect of the influencer campaign is not that significant and in the long-term perspective can be influenced by other campaigns as well.

For all the campaigns, the popularity of the main keyword was calculated. The immediate popularity is the popularity during the campaign, the short-term popularity is calculated as cumulative popularity three days after the campaign and the long-term popularity is calculated as cumulative popularity of the 4th–13th day. The results are shown in Table 63.2.
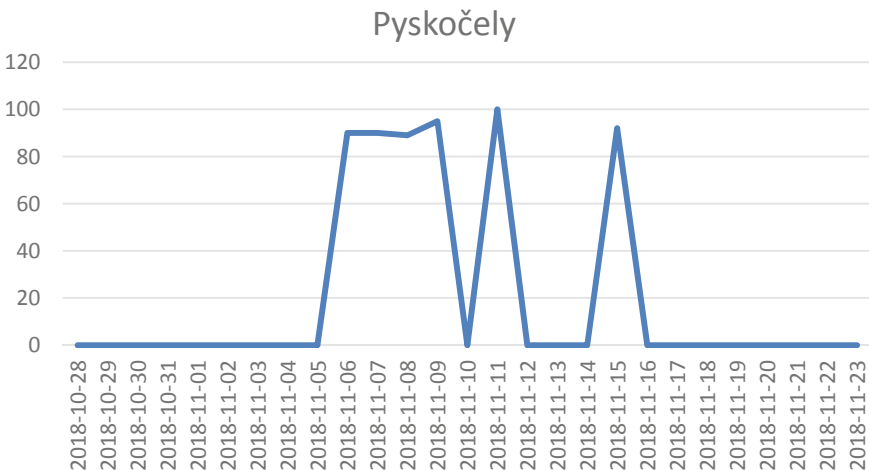
Fig. 63.1 Popularity of the key word Pyskočely *Source* Google Trends, 27.6.2020
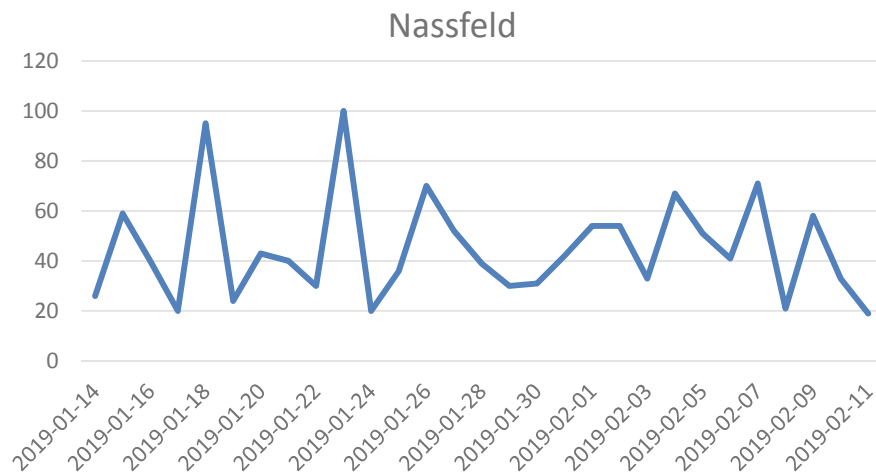
Fig. 63.2 Popularity of the key word Nassfeld *Source* Google Trends, 27.6.2020

Table 63.2 Cumulative popularity of the main key words of the campaign

Campaign	Immediate popularity	Short-term popularity	Long-term popularity
Pyskočely	274	100	92
České Švýcarsko	181	90	270
Chalet Eisner	62	46	153
Skog Harrachov	158	0	0
Nassfeld, Austria	317	103	483
Penzion Zikmundov	51	86	92
Chata Hradečanka	242	55	116
Chalet in	149	46	149
Dobčické rybníčky	50	151	104
Mlýn Černovice	195	173	363

The numbers will be used for the calculation of the percentage change as shown in Table 63.3.

The table shows immediately the first issue connected with this method. In case, the awareness of the search term is low, and Google Trends reports zero as term popularity; it is not possible to calculate the percentage change. Therefore, the method

Table 63.3 Change of cumulative popularity as an immediate, short-term and long-term effect of the influencer campaign

Campaign	Immediate popularity	Short-term popularity	Long-term popularity
Pyskočely	204.4	11.1	2.2
České Švýcarsko	9.6	−45.5	−47.87
Chalet Eisner	37.8	2.2	240
Skog Harrachov	–	–	–
Nassfeld, Austria	36.6	−8.8	28.1
Penzion Zikmundov	4.1	75.5	−67.4
Chata Hradečanka	49.4	−22.5	−38.0
Chalet in	–	–	–
Dobčické rybníčky	–	–	11.8
Mlýn Černovice	129.4	103.5	108.6

is not applicable for destination (attractivities) with low brand awareness and a low number of searches. To evaluate the results of a campaign, it might not be necessary to calculate the percentage change; the simple difference might indicate the impact and help especially smaller establishments and destinations for future decision.

The second limit of the method that must be considered is a potential influence of other campaigns in the long-term period, especially in popular destinations (attractivities) whose marketing communication is more intensive. This effect can be observed by České Švýcarsko or Nassfeld where the percentage change is even negative. Influence of this limit can be minimized by a proper time schedule planning of the marketing communication or the choice of the particular attractivities and products presented.

The third limit of the usage of Google Trends is the normalization of the data. The normalization is a useful tool in many aspects; however, in this case, it leads to a significant dependency of the results on the time period set in Google Trends. Figure 63.3 shows the difference in results caused by the normalization in time. The time period can be decided by the evaluator as a fixed time that makes sense for the purposes of evaluation.

The fourth limit of using Google Trends for evaluating the effect is the method of presenting the data. Google works with trillions of Google searches and for Google Trends only a random sample is used. The caused distortion in results is shown in Fig. 63.4. These results cannot be influenced or adjusted by the evaluator, and it is absolutely dependent on Google.
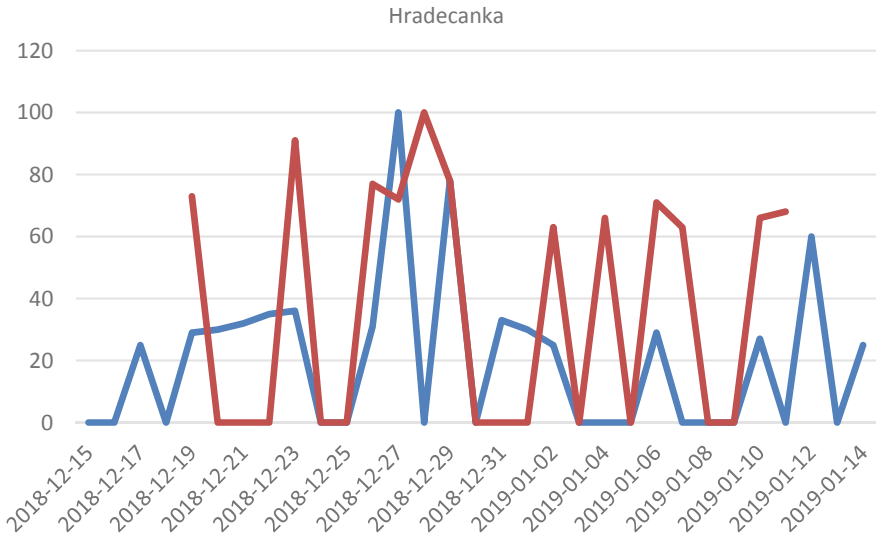
Fig. 63.3 Popularity of the key word Hradecanka in the period 15.12.18–14.01.19 and 19.12.18–11.01.19. *Source* Google Trends, 27.6.2020
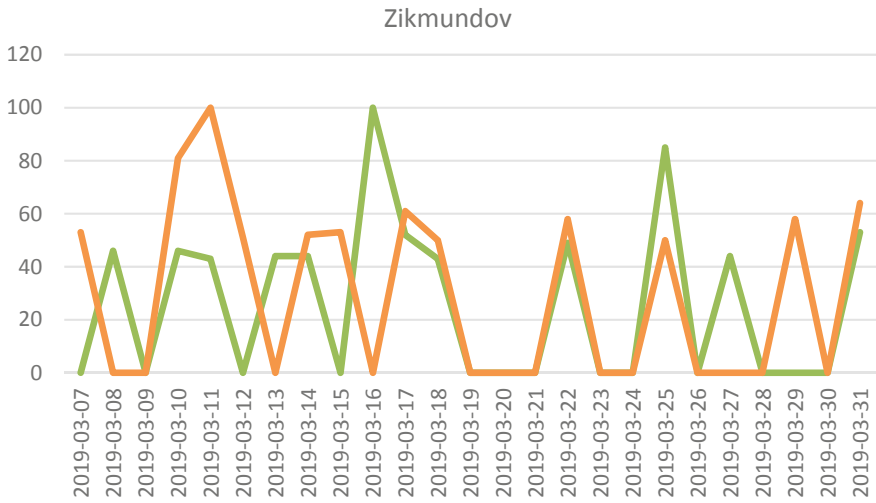
Fig. 63.4 Popularity of the key word Zikmundov in two different searches *Source* Google Trends, 27.6.2020

Therefore, the usage of random sampling represents the main problem. A test was performed to analyse if the differences in measurements are significant. An example of Zikmundov was taken, several searches performed, and the similarity of the results was tested (Table 63.4).

Table 63.4 Analysis of correlations

Spearman's rho		Correlations					
		M1	M2	M3	M4	M5	M6
M1	Corr. coefficient	1.00	**0.953**	0.10	0.13	0.20	0.31
	Sig. (2-tailed)	0.00	0.00	0.63	0.55	0.33	0.13
M2	Corr. coefficient	0.953	1.00	0.07	0.15	0.22	0.25
	Sig. (2-tailed)	0.00	0.00	0.76	0.48	0.30	0.23
M3	Corr. coefficient	0.10	0.07	1.00	**0.470**	0.36	0.28
	Sig. (2-tailed)	0.63	0.76	0.00	0.02	0.08	0.17
M4	Corr. coefficient	0.13	0.15	0.470	1.00	0.00	**0.486**
	Sig. (2-tailed)	0.55	0.48	0.02	0.00	0.98	0.01
M5	Corr. coefficient	0.20	0.22	0.36	0.00	1.00	0.07
	Sig. (2-tailed)	0.33	0.30	0.08	0.98	0.00	0.74
M6	Corr. coefficient	0.31	0.25	0.28	0.486	0.07	1.00
	Sig. (2-tailed)	0.13	0.23	0.17	0.014	0.74	0.00

Only 3 of the 15 correlation coefficients are statistically different from zero at the 5% level of significance, i.e. 80% of the measurement pairs are linearly independent. For the same measurements, all correlation coefficients would be equal to 1. The only correlation coefficient approaches this number, 0.953. The other two statistically significant correlations are below 0.5 (0.486 and 0.470 at 5% level of significance), which is a moderately weak correlation. Therefore, the results are not reliable, and it is not recommendation worth to use the method. From a practical point of view, it would be possible to prepare more results, calculate the average popularity and work with the average. However, this would be very time-consuming and the reliability of the data might be still weak.

63.4 Conclusion and Discussion

The aim of the paper was to verify or reject the appropriate use of the proposed method of measuring the impact of influencer marketing on the demand and to identify the limits of using Google Trends. The proposed method consists of an evaluation of the immediate, short-term and long-term effect on the search term popularity and calculation of the percentage change in cumulative popularity over the time period. The method itself has a problem in calculating the popularity change for keywords with low number of searches. Other limits are caused by the usage of Google Trends and data normalization. The reported popularity is significantly influenced by the selected period for data examination. As Google Trends uses sample data for preparing the graphs and tables, this can significantly distort the results.

As a result of the research, the proposed method is denied as generally applicable. The calculation of percentage change can be used in case of higher popularity of the

keyword when even the lower level of the popularity is higher than zero. The other limits can be till a certain extend controlled or minimized. The most important limit (and without possibility of elimination) is using the random sampling by Google.

In a future research and testing, it might be interesting to analyse if the significance of random sampling will decrease with more common keywords with more searches, and the results would be more reliable for the use.

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Author Index