

BSc thesis in Economics at Aalto University: a Brief Guide

Miri Stryjan Pauli Murto

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Abstract

This text guides students in planning, writing and presenting their Bachelor's (BSc) thesis in Economics. The work with your own thesis, as well as defending it and acting as opponent to another student's work is an opportunity to (a) use and show your command of the theoretical and analytical tools you have obtained during your economic education and (b) demonstrate your special knowledge of your research topic. An important goal of the thesis process and the Bachelor's Seminar is also to learn to present your work both orally and in writing in a clear and concise manner.

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1 Selecting the topic

1.1 Selecting a suitable topic for your thesis

A Bachelor's thesis does not need to contain new scientific results. In most cases, such a thesis is a literature review. A thesis can consist of a clear and thorough discussion and critical evaluation of an already examined topic and existing theories (often just one), that you then place into a broader context. A thesis can also be a systematic review of previous empirical research on your chosen topic. It is possible and encouraged to undertake a small-scale empirical or theoretical work of your own in your BSc thesis, but this is by no means a requirement.

You should base your topic selection on the foundation you already possess, that is themes of the Economics courses you have already taken before the Seminar starts. It is highly recommended to choose a topic that you are truly interested in so that the writing does not turn into a repulsive and forced task. The topic is agreed during the first meetings.

Ideas for topics can be drawn for example from academic journals, but inspiration can also be found in daily newspapers and current events. You can also turn to the professor in charge at the beginning of the seminar. Economic policy portals, webpages and researcher blogs can be another place to get started. Portals such as <https://voxeu.org/> and <https://voxdev.org/> presents recent economics research to broader audiences. Browsing these sites can be a good way to find both interesting topics studied by economists and some first references to relevant academic literature.

A good thesis topic is a specific "problem" that your thesis addresses, for example a question that your thesis then gives an answer to. An important aspect of specifying the thesis topic is to define the question in a sufficiently narrow way. Broader topics are more difficult to write about in a satisfying manner, as you then need to familiarize yourself with a vast amount of literature and a number of theories to be able to address your research question well.

2 Searching for literature

2.1 Getting started: finding suitable literature

When you have found a suitable topic, the next step is to get familiarized with previous literature. Because there is a huge supply of available literature, you need to choose with care the

ones you will read. Here are some suggestions of how to start.

- Look for information on your topic in course text books. They also include references to original publications on the topics and models they discuss. One thing to keep in mind if using this approach is not to rely only on very old textbooks.
- Search for literature using Google Scholar or library databases in the digital campus library. The problem is often that references are plenty, sometimes even to excess. For example searching for the term "deposit insurance" in EBSCO Business Source gives you more than 10,000 hits, from which you should be able to pick the most important ones, and the ones that are related to economics research rather than other disciplines. It is hard to figure out the top references. If you restrict the search to scholarly journals, the amount of references drops considerably (1,429 references). You then need to focus on articles published in Economics journals. In the jstor database you can also search for Economics journals.

A way of narrowing down your topic to economics papers is to search in Google scholar for keywords that include both your topic and some theoretical concept or empirical strategy used in economics/econometrics.

- From databases SSRN Social Science research network and NBER National Bureau of Economic Research you can browse through and print the newest working papers, and you can also search for keywords.
- You can also utilize so called review papers related to your topic. These are academic papers that summarize the most important research during the last couple of decades on a given topic. These articles often have the words "review" or "survey" appearing in the title or abstract, or have very general names. Some examples:

Shleifer, Andrei, and Robert W. Vishny. "A survey of corporate governance." *The journal of finance* 52, no. 2 (1997): 737-783.

Frederick, Shane, George Loewenstein, and Ted O'donoghue. "Time discounting and time preference: A critical review." *Journal of economic literature* 40, no. 2 (2002): 351-401.

DellaVigna, Stefano. "Psychology and economics: Evidence from the field."
Journal of Economic literature 47, no. 2 (2009): 315-72.

Olken, Benjamin A., and Rohini Pande. "Corruption in developing countries."
Annu. Rev. Econ. 4, no. 1 (2012): 479-509.

One important journal that publishes surveys on economic research is Journal of Economic Literature, but surveys are also being published in many other journals. Journal of Economic Perspectives publishes researchers' views on topical themes. Often these articles offer a good review of the theme.

- Look at the summaries on the homepage of the Nobel committee: <https://www.nobelprize.org/prizes/lists/all-prizes-in-economic-sciences/> where literature related to each of the economics prizes is summarised and explained.
- Ask for appropriate literature from the professor in charge of the Seminar or from the external advisor, if you have been assigned one. You can also look among the academic staff of our department for a suitable person that is in acquaintance with your topic. You can send an email or go and see that person during office hours and inquire for apt literature. In most cases this is how you will acquire all the literature you need to get started. This procedure can also help you narrow in on your specific thesis topic.

One way of finding out the most relevant articles is the following: look for the 10-15 newest articles on your topic that are published in economics journals and/or written by economists, and read the introduction chapters in those. Pay attention to the cited references; if five of those introduction chapters cite article Y, you should also search that one and read it. So you should aim to include those articles that are being cited most often. Number of citations is a good way to know if a given article is important, but it is not a sure method, since newer articles will have fewer citations only because they are new.

2.2 Getting access to the chosen literature

After you have managed to pin down some important articles, you have to get access to the full texts. If you cannot print the article straight from the database, you have to search for it yourself. There are different possibilities for that.

1. Use Google Scholar to search for the name of the article and/or that of the author(s). Most of the articles can be found this way. Also here, you will often find earlier "working paper" versions of the published paper. Try to find the latest version possible.
2. When it is an article from a scholarly journal, you can also start by searching the journal's homepage. From there, articles are often available for printing, if you have a license. Through the Aalto University digital campus library you can get licensed access to most of them.
3. If you are unable to access the article this way, it can be a good idea, especially for newer articles (past 10 years) to check the webpages of the authors of the paper. There you will often find links to earlier versions of the same paper, that are available for free.
4. If the article is a publication of some organization (for example the IMF, World Bank, OECD, ILO) you should search the homepage of that organization, look for "publications" or "reports" and search for the article in question.
5. Look for the article or its earlier version in databases Econlit, Proquest, EBSCO, SSRN, NBER, JSTOR.
6. For books, you may search for LINDA database for the library where the book can be located, or you can contact Aalto Learning Center for help on this.
7. Usually the seminar program includes an information retrieval session by Aalto Learning Center, where you get more information on how to access literature.

2.3 Judging the quality and relevance of different types of texts

It can be difficult to judge if a given text is relevant for your thesis. This may be because you are uncertain if the text is "economics" or rather belongs to another discipline, but also because you are uncertain if the text is of high enough quality. Here are a few tips on how to judge and identify the quality of a text.

2.3.1 Is it Economics?

- Look up the authors: are they working in departments of economics? Did they publish other papers in Economics journals?

- Does the paper refer mainly to economic papers in their bibliography?
- Look for keywords from economic theory: utility maximization, optimization problem, incentives, budget constraints, agency/principal agent problems
- Look for methods typical to economic empirical analysis (Difference in differences, RCTs, Instrumental variables)

Note: It is OK also to cite work from other disciplines in your thesis, if motivated by your topic. But you should make sure to also cite economics papers, and frame your thesis in a way that is relevant to economics rather than other adjacent fields such as finance. Discuss with your advisors and with seminar teacher how to find an economics angle.

2.3.2 Judging quality

This is tricky for students and senior researchers, but you can get hints from if and where the paper is published, if the paper has been cited by other researchers, and by learning more about the authors of the paper.

- **Rankings and listings of academic journals** some examples that you can use are

JUFO Portal: <https://jfp.csc.fi/en/web/haku/julkaisukanavahaku> Finnish official classification and rating of journals in different academic fields. You can search by journal name here. If a paper that you consider is in a journal not included in this classification, then you should treat that with high reservations.

IDEAS/RePec impact factor ranking: <https://ideas.repec.org/top/top.journals.simple.html>

This ranking of academic journals in Economics and related fields give an indication of which are the respected journals.

- **Number of citations** For academic articles, this is a good way to know if a given article is important. But an article with few citations is not necessarily less important, for example, newer articles will have fewer citations only because they are new. It is also the case that certain journals that are not highly ranked in terms of their academic merits are read by many policy makers, and cited in policy reports, which can render them many citations.

- **Credentials of the authors** Look at the webpage of the authors. Are they in a (well respected) university? Are they senior or PhD students? What else have they published? Are they working in departments of economics? Did they publish other papers in Economics journals? All this can give you hints on how seriously you should take the paper.

In Economics, the publishing often takes very long. Therefore, it is also common to cite unpublished papers, so called Working papers. Especially on new topics it can sometimes be hard to find enough published papers to cite. It is OK to cite some working papers in your thesis, but the drawback of Working papers is that they have often not gone through the steps of control by other researchers ("peer review") that good journal articles have. It is therefore especially hard for students to judge their quality. Therefore, you should find a balance between published work and unpublished Working papers. Try to assess the quality of the working paper by e.g. looking at the identity of authors, their universities and other published work, checking if the paper is already cited (via google scholar) and whether the paper is part of an established working paper series (e.g. NBER).

3 Preparing and presenting your research plan

3.1 Organizing your thesis

Bachelor's Theses in Economics at Aalto University are typically literature reviews. In order to get the highest grade, no scientific contribution of your own is required. The main emphasis in grading Theses is on the clarity of the presentation and your ability to perceive and discuss different aspects of the problem you study. Organizing your thesis is important for the clarity of your research and you should start thinking about the structure of your work early on. You should sketch a preliminary structure already when you define your research question. At first the structuring is very crude, but gets more detailed as you proceed with your writing. The lucidity of the structure is essential and crucial for the success of your thesis, albeit it is often also the most difficult part. Comments you get from your opponent, fellow students, and the professor in charge during the classroom presentations and on your final draft can help you tremendously.

3.2 Presentation of Research plan

Your first task in the Bachelor's thesis seminar is to write down and present your research plan in a classroom meeting. The idea of this step is to help you get started with the writing as well as to make certain that you are on the "right track" with your work and there are no insurmountable problems. A research plan consist of a 2 pages written report and a 5 minutes presentation with slides. The following are components of a good research plan presentation.

- Presentation of the topic clear enough so that all seminar participants can follow
- Justification of the topic's importance, and the relevance for studying it in economics
- The precise research question and its importance
- A couple of literature references. What is already known about the topic? Are you sure you will find enough literature?
- The type of study that you plan to carry out: literature review? empirical work? (if empirical, using what data and methodology?)
- (Anticipated results)

The research plan should be written with line spacing 1.5, with usual margins. The cover page must include the working title of the thesis, your name, email address, date and the text "Bachelor's Seminar".

4 Structure of the thesis

The structure of the Bachelor's thesis is practically the same as in any other article in a scientific journal. The structure does differ a little depending on if the thesis is a literature review or if it includes data analysis. This is discussed below in subsections [4.3](#). All theses should begin with a Table of content and an Abstract.

4.1 Table of contents and sections

You must have a table of contents in your thesis, where you present all chapter and section titles with page number references. Structure the sections and headlines so that it is easy for the reader to get an idea of the content and structure of your work. To use a couple of sub-sections

can facilitate the reading considerably. Equivalent parts of the work should have approximately equivalent "status" in terms of being either a main section or a sub-section.

4.2 Abstract

The abstract should be written last. It gives a short review (10 to 15 lines) of the research question and key results. Often it is also stated what type of research it is - literature review, empirical work, or theoretical model. Below you can find as an example the abstract from Holmström and Tirole (1997)

We study an incentive model of financial intermediation in which firms as well as intermediaries are capital constrained. We analyze how the distribution of wealth across firms, intermediaries, and uninformed investors affects investment, interest rates, and the intensity of monitoring. We show that all forms of capital tightening (a credit crunch, a collateral squeeze, or a savings squeeze) hit poorly capitalized firms the hardest, but that interest rate effects and the intensity of monitoring will depend on relative changes in the various components of capital. The predictions of the model are broadly consistent with the lending patterns observed during the recent financial crises.

As you can see, first the authors tell the reader that it is a theoretical model they aim to build. The first two sentences introduce the reader to the research problem they want to address. The introduction proceeds from a more generic picture (bank model) to a more and more elaborate description of the research question. The third sentence presents the key results. The last sentence endorses the fact that results are in line with reality.

4.3 Types of BSc theses

Generally, students can choose between writing a Literature review or writing an empirical research thesis with data. In this section, the layout of these types of theses will be discussed in some detail. It is also possible to do a "hybrid" between these two options: a thesis can be mainly a literature review but also include some data exercise.

4.3.1 Alternative 1. Literature review

Choose a question that you are interested in studying, and write the theses based on existing research papers (mainly in economics) relating to this question. Below follow some guidelines for how to write in a clear manner, and how to discuss papers that you use in the literature review.

In a Literature review thesis, the exact sections of the thesis will depend on the topic, but the thesis will always have the following parts after the Abstract: (i) Introduction, (ii) content sections where you discuss and summarize different parts of the relevant literature (iii) Conclusion. In addition, there are some optional sections:

- after the Introduction, theses and articles in economics often include a theoretical or "conceptual" framework, where the research question is related to one or a few theoretical models from economics, and sometimes hypotheses are outlined.
- after the Introduction, theses and articles in economics sometimes include a section called "context" or "background" or "institutional background" that explains the specific setting to the reader. For example, a thesis about school choice in Finland could, after the introduction, have an explanatory section about the Finnish school system and at what levels school choice occurs.
- It is also common to have a separate "Discussion" section before the "Conclusion".

Below follow more detailed instructions for the "necessary" sections of a literature review thesis:

Introduction

Note: the question you want to answer in your thesis should be clearly outlined already early in the introduction. In this section, you should:

1. Motivate the topic and question: Explain why this is an important/interesting question to study, both for society in general and for economists in particular.
 - To make the connection to economics, you can for example refer to theoretical models or standard assumptions in economics that you learned in the basic courses or other courses, and that have something to say about the question you want to study in your thesis.

- Also motivate the study of this question in more general terms: why does the question matter for the welfare of people? Why/how is it relevant for policy? Here you can use both academic literature and quotes from media such as newspapers, statements from policy makers, etc.
2. In the introduction, it is often a good idea to discuss briefly the main challenges for answering your question. If existing research studies "disagree" with respect to the question you study, or if there is not yet a good model to describe the question you study, why is that? For empirical questions, some candidates might be: there is a difficulty related to isolating causality of relations between variables or lack of access to useful data to study this question. For theoretical work: the thesis may discuss a new area where few models have so far been built to explain, or several models exist but they differ in their assumptions and lead us to different predictions about the same question.
 3. Provide a brief overview of the material that will be covered in the thesis in the introduction, stretching for about one page. Here you should give a brief overview of what aspects of the question your literature review will cover (perhaps these aspects will each be a section of the "content sections" part of the thesis) and also, briefly discuss your findings.
 4. Finally, often the introduction concludes by providing a "road map" to the rest of the thesis, stating in one sentence for each section what the reader will find in each of the sections.

Content sections

This is the main part of the thesis, and consists in sections where you discuss and summarize different areas of the literature that will help you answer your question.

1. Start each section with a few lines explaining to the reader what you will do in this section and why (how does the section contribute to answering your overall question in the thesis).
2. For the empirical papers that you discuss in your thesis, rather than only reporting what their results are and stating that "different studies find different results", in a literature review, it is important to create a systematic overview of the literature in a specific area.

This means outlining *why* the results from previous studies differ (if they do). For each empirical paper that you discuss, think about the following aspects and include some of them in your discussion, as they may affect the results of the given study:

- What is the research question asked in this particular paper, and the setting?
- What are the main challenges for answering the research question (such as challenges in isolating a causal effect or in finding suitable useful data)? In what way, and how well, does the paper address these challenges?
- What is the external validity of the papers, according to you?
- What are some drawbacks of the method used in the paper (small sample? problems with the data? Self-selected sample? Low external validity? etc.)

3. For theoretical papers that you discuss in your thesis, it is important that you explain clearly the logic of the models and demonstrate that you have understood the main arguments. Whenever you present equations, be sure that you and the reader can understand them properly. Never just copy-paste equations from the original source without explaining them properly - often it is better to describe the logic of the model verbally. In some cases a thesis can be mainly based on a handful of theoretical papers (sometimes even one key paper), and then the presentation of the theoretical model(s) is a key contribution in your thesis. In such a case it is important that you present the model(s) carefully so that the reader can follow without consulting the original source.

4. Throughout the "content sections", conclude each section with a short discussion about how the literature that you have discussed in the section helps us getting closer to the answer of your question, and what is still missing.

Conclusion

Final discussion that connects the results back to your research question, and also can discuss more "big picture" questions that are connected to your conclusions from your thesis, and propose new research questions.

4.3.2 Alternative 2: Empirical research study with data

This is an unusual choice at the BSc level, but possible. An empirical study can be based on secondary data (data already collected and available for free), or on data that you collect yourselves. The guidelines in section 4.3.2 can also be useful for students writing a thesis that is mainly a literature review but also contains a small data exercise.

The exact sections of an empirical thesis will depend on the topic, but an empirical research thesis will always have the following parts after the Abstract: (i) Introduction, (ii) Data (iii) Empirical strategy (iv) Results (v) Conclusion

In addition, there are some optional sections:

- A brief literature review of the academic literature most relevant for your question is necessary also in an empirical thesis, but it can be part of the introduction. If you prefer, you can also make it a separate section after the introduction.
- after the Introduction and literature review, theses and articles in economics often include a theoretical or "conceptual" framework, where the research question is related to one or a few theoretical models from economics, and sometimes hypotheses are outlined.
- after the Introduction and literature review, theses and articles in economics sometimes include a section called "context" or "background" or "institutional background" that explains the specific setting to the reader. For example, a thesis about school choice in Finland could, after the introduction, have an explanatory section about the Finnish school system and at what levels school choice occurs.
- It is also common to have a separate "Discussion" section before the "Conclusion".

Below follow more detailed instructions for the "necessary" sections of an empirical research thesis.

Introduction *Note: the question you want to answer in your thesis should be clearly outlined already early in the introduction.* In this section, you should:

1. Motivate the topic and question: Explain why this is an important/interesting question to study, both for society in general and for economists in particular.

- To make the connection to economics, you can for example refer to theoretical models or standard assumptions in economics that you learned in the basic courses or other courses, and that have something to say about the question you want to study in your thesis.
 - Also motivate the study of this question in more general terms: why does the question matter for the welfare of people? Why/how is it relevant for policy? Here you can use both academic literature and quotes from media such as newspapers, statements from policy makers, etc.
2. In the introduction, it is also a good idea to discuss briefly the main challenges for answering this question. For empirical questions some candidates might be: a difficulty related to isolating causality of relations between variables or lack of access to useful data to study this question. Also, connect this to YOUR thesis: how do you address these challenges? (for example, related to isolating causality of relations between variables or access to useful data?) and how does your thesis add to related, already existing work.
 3. Provide a brief overview of the material that will be covered in the thesis in the introduction, stretching for about one page. In an empirical thesis, this part should include a short overview of what you do: what data do you use, what is the advantage of it, how do you analyze it, and what are your main findings.
 4. Finally, often the introduction concludes by providing a "road map" to the rest of the thesis, stating in one sentence for each section what the reader will find in each of the sections.

Brief literature review

Here you summarize the most important literature related to your subject. Follow the above guidelines for summarizing academic research. This can also be an integrated part of the introduction (as it indeed is in many empirical papers in economics).

Data

Here, you describe the data you use. Why is this data suitable to answering your question? How is it different from data used in other studies? What is the source of the data? how is the data organized? What are the central variables that you will use in your analysis? If you collect your own data, describe the data collection process.

Empirical strategy

Describe the Empirical strategy, in other words, the statistical method that you use, and discuss strengths and weaknesses with your empirical strategy

Results

In this section, you present your results from the empirical analysis of your data, both in tables/ figures and with a discussion that explain the main things to focus on.

Conclusion

Final discussion that connects the results back to your research question, and also can discuss more "big picture" questions that are connected to your conclusions from your thesis, and propose new research questions.

5 Manner of presentation

5.1 Clarity and consistency

Regardless of the topic, you should aim for clarity and consistency throughout your thesis. Make sure that you understand each and every word you write and that there are no gaps in the explanation of in how your work proceeds. By limiting the amount of basic ideas in your thesis to 1-3 you can make your work easily understandable. Keep in mind:

- You write your thesis to your own Seminar group. Keep this in mind, when you make assumptions on what things and concepts you do and do not need to define.
- State the most important definitions already in the beginning of your thesis, or at the beginning of the part of the text you are going to use them.
- An academic text (at least in Economics) is dry and predictable. Do not keep your reader waiting to know or guessing what will be your research question or focus, you need to state this clearly. Help the reader know what to expect in each section by adding a few lines of introduction to each section, explaining what you will do in the section and how the section contributes to the bigger "story" of your thesis. Such text that guides the reader through your thesis is sometimes referred to as "meta-text".
- Explain concepts, acronyms/abbreviations and symbols as they appear the first time.
- Take notice on the style of your thesis and keep the same style throughout your work.

- A few more specific tips about language use:
 - Do not mix past and present tense unless it is meaningful for your "story" to do so.
 - Avoid the use of passive voice as much as possible, as it is imprecise and can be confusing.
 - When referring to your own work on the thesis: it is OK to write "I did so and so" in an academic text. Do not write "We" unless you have coauthors (which you probably don't have in the thesis!).
 - If you write in English: do not use abbreviations such as don't, isn't, wouldn't. They belong to spoken language or popular writing.
- See that the titles in figures, tables, and chapters are representational, consistent, and in line with the rest of the text.

5.2 References

The list of references contains only those references that are cited in the text (and in footnotes). List of reference is presented in alphabetical order separately for literary references and other references. Books can be marked in the list of references in the following manner:

Black, Fisher, Michael C. Jensen and Myron S. Scholes (1972) "The Capital Asset Pricing Model: Some Empirical Tests", in Michael C. Jensen (publ.) Studies in the theory of Capital Markets, New York, NY, Preager, 79-121

or

Huang, Chi-fu and Robert H. Litzenberger (1988) Foundations for Financial Economics, New York, NY, North Holland

Articles are cited similarly. Volumes and years of the journal publications must be accurate. It is recommended here to use one of the citation styles in Google Scholar (APA, Harvard or Chicago). For example (using Chicago) an article is cited as follows:

Ahlin, Christian, Selim Gulesci, Andreas Madestam, and Miri Stryjan. "Loan contract structure and adverse selection: Survey evidence from Uganda." Journal of Economic Behavior & Organization 172 (2020): 180-195.

Glancing through scholarly journals you can observe that the way references are cited depends on the journal. Whatever style you choose, make sure that you keep it throughout your work. References to webpages can be cited as below:

World Bank (1987). Rwanda - The role of the communes in socio-economic development (english). Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/331381468105552313/Rwanda-The-role-of-communes-in-socio-economic-development> [Last accessed on 2019-08-31].

New York Times (April 25, 2017). How a nation reconciles after genocide killed nearly a million people. <https://www.nytimes.com/2017/04/25/world/africa/rwandans-carry-on-side-by-side-two-decades-after-genocide.htm> [Last accessed on 2017-08-31].

For the newspaper article, the date the article was published is added. The address of the webpage is added at the end. The citation should also mention when you have visited the webpage in question.

Note that for journal articles and books that are published, you should not cite the url of the article/book just because you happened to access it online. Use instead one of the proper formats for citing a journal article or book discussed above.

5.2.1 How to cite properly in the text

When you cite directly or indirectly information obtained from literature, interviews, or inquiries you must always mention the reference inside your text. There is no one and only shape for references, but the main way to include references in economics texts (including BSc theses) is references placed inside text:

ex. 1 Fama (1991) claims that...

ex. 2 There exists a broad literature (see e.g. Fama, 1991).

If you have multiple references by the same author(s) from the same year, you can add a letter symbol to the year by writing Fama (1991a), Fama (1991b) and so on. When you quote a specific part of an article (exact words) you must include the exact page numbers; for ex. Fama (1991a), pp.1582-1583.

You must include references straight after the citation. Avoid long citations. Also, do not just use citations in the beginning or in the end of sections. Never use citations in titles or headings. When you want to show that the citation refers to a specific clause or sentence in your text, write the reference before the punctuation mark. Respectively, if you refer to a whole paragraph write the reference after the punctuation mark. Write direct citations in quotes. When a whole chapter is based on the same source, tell it at the beginning of the chapter: "Next I will study the model by Banerjee and Newman (2003)".

Footnotes should generally not be used for references. Footnotes are handy when you want to add observations, remarks and definitions without compromising the legibility and fluency of your text. Footnotes in Economics texts generally include information that some readers may require when reading your text, but that are not central to the text.

5.2.2 When to cite?

Students writing their first academic texts often struggle with determining when a citation is needed. Generally, whenever you are introducing a new fact or piece of information that does not come from your own data, and can not be considered as common knowledge, you should provide a reference to where this fact or information came from.

Some examples of when a reference is needed:

- When stating a "hard fact" that changes over time (the GDP or population size of a country). Here, you need to provide both a year when the figures were measured, and a source of this figure.
- When making a statement about a generally held opinion ("It is generally believed that...") Here, you need to cite evidence of the claim, or an academic reference that provides such evidence.
- When expressing an opinion "Climate change is the biggest challenge facing humanity". Here, you could find and quote e.g. politicians or researchers who make this claim, and you should also rephrase, to make it clear that this is a claim and not an indisputable fact: "According to X, climate change is..."
- When making general claims about the literature in a certain area, for example how research has evolved over the last 50 years. It is not credible that a bachelor level student

has enough expertise in a certain area. You need other academic references to back up such claims.

- When you use the exact words from another text. In this case, the cited words need to be put within quotation marks. Avoid using many direct quotes in your thesis. It makes the reading difficult and signals that you have not yourself understood what you read.

A reference is not needed when stating common knowledge (if it is undisputed) such as "Helsinki is the capital of Finland" or "a minute has 60 seconds".

5.2.3 How to cite a source cited in another source?

When a student works on a thesis, some of the ideas and information may come from survey/review articles. In such cases, should one cite the original author of the idea, or the author of the article? The answer is that this depends.

A review article summarises the literature in an area or topic, and draws conclusions about where the literature stands at the time of writing, and what are the gaps in the literature. If you want to cite one of these conclusions or opinions, you may cite the author of the review article.

Example:

Blattman and Miguel (2010) review the economics literature on conflict, and stress the need for more research on the determinants of individual participation in violent conflict.

Alternatively, you may cite the review article to show to the reader that there is a lot of research on a certain area. Example:

Our research is part of the growing body of work in the economics of education that tests and evaluates policies designed to overcome behavioral barriers in education (for surveys of this literature see Lavecchia et al., 2016; Damgaard and Nielsen, 2018; Koch et al., 2015).

If you are describing an idea or finding from one of the references cited *inside* the review article, you should instead go to the original text, and cite it – after double checking that the claim made in the original text is in line with what the review paper said about the text.

5.3 Tables and figures

Include the following information to all your figures and tables 1. Number in chronological order from the beginning 2. Title 3. Source (if figure or table is taken from elsewhere).

5.4 Layout, length and printing

A Bachelor's thesis should be long enough so that topic is being diversely covered and research questions get answered. Adequate length is about 18-25 pages. Use font size: 12, font: Times New Roman or Georgia, line spacing: 1.5 spacing and normal margins. Exceeding this recommended length, either through more pages or smaller font or line spacing, can lead to a penalty on the grade. This is because one of the goals of the BSc thesis is to practice concise and efficient writing.

A Bachelor's thesis should include a cover page, stating the thesis title, the student's name and some administrative details of the BSc seminar course. Printing customs depends according to the professors in charge of the seminar and will be announced separately.

6 Oral presentation of final draft and opposition by students

The last classroom element of the BSc seminar is the classroom presentation of final thesis drafts, with other students acting as opponents. This is several weeks before the submission dead-line so that there is still time to improve the thesis based on the comments from the opponent, teacher, and other participants. The draft should at this point be quite close to finished so that it is meaningful to give final comments on it. Based on these comments you should be able to finish and submit your thesis independently.

6.1 Presentation of final draft

During the presentation you should tell your research problem and the most important earlier studies on the topic. Describe the content of your work and the results you obtained. Using slides (e.g. created in Power point) is highly recommended as it clarifies the presentation. The length of the presentation of the final draft depends on the size of the group, but typically is around 10 minutes. Recall that a presentation is not a proof of your reading skills. It is therefore highly recommended not to make the slides dense with text, and to practice the presentation

several times before the oral presentation. This practice will also help you understand if the presentation is easy to follow for someone not familiar with your topic, or whether there are "gaps" in the presentation.

6.2 Opponents

A part of the requirement of the BSc seminar and thesis process is acting as an opponent for another student's thesis. It is the opponent's job to read and provide constructive comments on the written final draft and also comment on the seminar presentation of this final draft. The opponent must cover the whole work written so far as well as the oral presentation. Naturally one must point out observed inaccuracies and shortcomings. In addition, the opponent must bring out the good features of the thesis, as well as his/her own point of views and possibly suggest some additional material etc. The opponent presents the main comments orally in the seminar, but should also submit the more detailed comments in a document and send it to the author. Details for the submission of the opponent report will be decided and communicated by the professor leading the course.

The opponent's work can be carried out in the following order:

1. Objectives and thesis outline. Is the title appropriate, does it cover the research area; has the writer achieved his goals? Would the opponent formulate the objectives or outline differently?
2. Structure of the work. Are different parts of the work being emphasized correctly, does the work progress logically?
3. Way of dealing with the subject. Would there be some alternative, better ways? What are the justifications writer has given to his/her choices?
4. Inaccuracies and shortcomings
5. Formal flaws in language, references, table of contents, and the technical layout of the work
6. Final statement (conclusion) and proposals for improvement. Opponent must emphasize on the principles of the thesis (items 1-3 in this list). If some sorts of mistakes appear regularly, it is enough to mention them once and give some examples.

NB! Opponents must give a systematic and critical evaluation of the seminar work. This is not achieved by going through the thesis page by page and dealing with subject issues, technicalities, and side issues respectively as they appear.

6.3 Additional readers

In addition to being the opponent on one thesis draft, each student is also required to read less thoroughly and comment on two other final drafts. Also here, the emphasis is on giving constructive and helpful comments, either on the content of the thesis draft or on the clarity, layout etc. Details for the submission of these comments will be decided by the professor leading the course.

7 Thesis submission

There is a strict dead-line for submitting the thesis, about three and a half months from the beginning of the seminar. The exact dead-line and submission details will be provided in the course home page.

8 Bibliography

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