

Development Economics 1

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Today's TA Session

- **Introduction**
- What is a referee report?
- How to write a referee report
- Criticizing the methodology
 - ▶ General points
 - ▶ Examples from real papers
- Conclusion

Introduction

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- Please don't hesitate to be in touch about anything related to the exercise sessions. Also, feel free to interrupt and ask questions during this session
- In this session I will perhaps use some terminology which you might not have heard before. Please interrupt and ask if there is something you don't understand.
 - ▶ Some examples: RCT, Identification Strategy, clustered standard errors, etc

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What is a referee report?

- Before any articles are published in journals, they are vetted by several *referees* who produce so called referee reports
 - ▶ Referees are active researchers who are experts in the research area
- There are two main purposes of these reports
 - ▶ They act as a quality check for the publishing journal
 - ▶ They give feedback to the author, who can improve his/her paper based on it
- Your job is to write one of these *as if* you were the referee for a journal

Let's recap a published article's lifespan

- To enter a journal, an article goes through the following steps:
 - 1 Come up with a research idea
 - 2 Collect/access the data and do research
 - 3 Formulate your ideas into a working paper
 - 4 Send the working paper to a journal
 - 5 The paper is **refereed**
 - 6 The editor desk rejects, accepts or asks you to revise and resubmit
 - 7 Repeat steps 2, 3, 4, 5 and 6 until the paper is ready for publication

Different kinds of papers

- Published article
 - ▶ Has gone through peer review (has been *refereed*)
- Working paper
 - ▶ Paper that has been presented at seminars and has been circulated.
 - ▶ Not through peer review yet, needs to be refereed
- Job market paper
 - ▶ A working paper or a published paper that an author uses to apply for jobs.
 - ★ Often written as a PhD candidate
 - ▶ Best work that the applicant has produced, meant to showcase skills.

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How to write a referee report?

- Your task is to produce a 2 page report
 - ▶ Start by summarizing the paper (approx. 1/2 page)
 - ▶ Then list and discuss the major positive and negative points (approx. 1 page)
 - ▶ End by discussing and pointing out minor points (max 1/2 page)
- State whether you think the paper is good or not
- Should the paper be published or not?
- How can the paper be improved?
 - ▶ Robustness checks, literature recommendations etc

How to write a referee report

- Recall that the main message is to help the journal in the process of deeming the paper publishable or not, while also suggesting improvements to the author

- Thus, your opinion is central and very important
 - ▶ The report is not an objective summary of the paper!

How to write a referee report: Summary

- First and foremost highlight what the new and novel contributions of the paper are!
 - ▶ First to estimate a causal effect, new and better data, yet unanswered or asked question etc.
 - ▶ Authors will give you hints. "We are the first to..." etc.
- Main research question - What are they trying to answer?
- Methodology and data
- Results
 - ▶ What do they find out?
- Conclusion
 - ▶ What do the authors conclude about their research question based on their results?

How to write a referee report: Summary

- The summary is an important part, it helps you show us that you have read and understood what the article is about

- However, remember to keep it clear and concise. Do not write more than 1/2 page, which ensures enough space for the feedback.

How to write a referee report: Major Points

- Remember to include both positive **and** negative points
- Make sure to always be constructive in your feedback
- Suggest improvements

How to write a referee report: Major Positive Points

- Positives often relate to the novelty of contributions
- Examples include
 - ▶ Question important, policy relevant or novel
 - ★ Question relevant to many people and policy-makers
 - ★ External validity: do the results generalize to many different settings?
 - ★ Hints from the paper and lecture material
 - ▶ Cleverness and novelty of the identification strategy
 - ▶ New data

How to write a referee report: Main negative points

- Can sometimes be difficult to find in papers written by people senior to you
- In Development Economics, researchers often try to estimate causal effects, which are the paper's most important contribution.
- The paper falls apart if the claimed causal estimates are not causal, so most attention should be given to the identification strategy.
 - ▶ Are trends parallel with DID? Is the instrument relevant and exogenous?
 - ▶ Is the treatment group as good as identical to the control?
- We will go through this more in detail in the criticizing the methodology section, right after the minor points

How to write a referee report: Minor points

- Structure
- Missing (important) literature?
- Layout
- Is the writing good? How could it be improved?
- Excess repetition and redundant points

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Criticizing the methodology

- This part goes through general points to think about in each identification strategy, and then provides an example from a real development economics paper.
- Empirical economics always compares one group to another in some way
 - ▶ Are the groups as good as identical before the treatment?
- Counterfactual: compare outcomes for the same people with and without treatment
 - ▶ Is the control group a valid counterfactual for the treatment group?

Criticizing the methodology

- Papers often use causal inference methods that should be familiar to you
 - ▶ RCT, DID, IV etc.
- As you know, these methods estimate causal effects *only* when their assumptions hold
 - ▶ Thus authors try to convince us that the assumptions hold and it is the referee's job to analyse whether they do or not

Criticizing the methodology

- Certain method specific procedures have become standard when evaluating whether the assumptions are likely to hold
 - ▶ note that often assumptions cannot be directly tested and we cannot *prove* that the assumptions hold
- Next we go through the things researchers usually do to convince their referees that their methods are robust for RCT, DID and IV

Randomized controlled trial (RCT)

- Key factor: is the experiment and randomization well designed to solve common endogeneity concerns
- What to check?
 - ▶ Different levels of randomization have different problems
 - ★ Village-level: Sample might be too small
 - ★ Individual-level: Spillover effects on other individuals
 - ▶ Are treatment and control group similar? If there are some imbalances at baseline, are you satisfied with how the authors discuss and account for them?
 - ▶ Can the participants manipulate their treatment status?
 - ▶ Compliance, attrition bias and take-up rates
 - ▶ External validity
 - ▶ Can you trust survey data?
 - ▶ Are standard errors correctly clustered?

RCT Example

- **Lubega et.al.** - Body and mind: Experimental evidence from women living with HIV
 - ▶ Studies the effect of providing nutritional information and cooking lessons to HIV positive women.

Table 1
Sample and attrition.

	Full sample	Control	Treatment 1 Nutrition	Treatment 2 Cookery
Baseline	4212	1057	1094	1020
Intervention 1	2492	640	640	661
Intervention 2	2612	604	748	635
Intervention 3/Mid-line	2613	666	666	636
End-line (Treatment 1 and 2)	2561	597	710	639
Intervention 4 (Treatment 3)				
End-line (Treatment 3)	1135	559		
% of treated at end-line that attended				
0 intervention rounds			3.33	3.17
1 intervention round			12.32	9.67
2 intervention rounds			32.03	25.36
3 intervention rounds			52.32	61.81
4 intervention rounds				

Table 3

Behavioral change at end-line in relation to the information contained in the nutrition campaign.

	(1)	(2)	(3)	(4)	(5)	(6)
	Access to information		Number of meals		Number of snacks	
Nutrition	0.068	0.072	0.143	0.135	0.454*	0.438**
P-value robust	(0.076)*	(0.036)**	(0.217)	(0.056)*	(0.081)	(0.029)
P-value RI	{0.028}**	{0.023}**	{0.042}**	{0.053}*	{0.048}**	{0.049}**
P-value MHT	<0.360>	<0.098>*	<0.463>	<0.105>	<0.360>	<0.092>*
Cookery	0.177	0.183	0.143	0.115	0.704	0.674
P-value robust	(0.000)***	(0.000)***	(0.189)	(0.140)	(0.003)***	(0.003)***
P-value RI	(0.001)***	(0.001)***	(0.037)**	(0.082)*	(0.004)***	(0.006)***
P-value MHT	<0.001>***	<0.001>***	<0.460>	<0.140>	<0.046>*	<0.033>**
Baseline outcome	No	Yes	No	Yes	No	Yes
Baseline covariates	No	Yes	No	Yes	No	Yes
Region dummies	No	Yes	No	Yes	No	Yes
Observations	1897	1894	1898	1893	1902	1897
R-squared	0.052	0.064	0.015	0.153	0.049	0.107
Baseline Mean Control		0.834		2.497		1.170
End-line Mean Control		0.805		2.449		1.184
	(7)	(8)	(9)	(10)	(11)	(12)
	Litres of water		Treated water		Used the recipe	
Nutrition	0.218	0.245	0.094	0.112		
P-value robust	(0.258)	(0.069)*	(0.094)*	(0.024)**		
P-value RI	(0.114)	(0.057)*	(0.121)	(0.065)*		
P-value MHT	<0.485>	<0.106>	<0.362>	<0.092>*		
Cookery	-0.060	-0.022	-0.053	-0.020	0.489	0.488
P-value robust	(0.743)	(0.835)	(0.591)	(0.751)	(0.000)***	(0.000)***
P-value RI	(0.678)	(0.877)	(0.377)	(0.732)	(0.000)***	(0.000)***
P-value MHT	<0.799>	<0.468>	<0.734>	<0.434>	<0.001>***	<0.001>***
Baseline outcome	No	Yes	No	Yes	No	No
Baseline covariates	No	Yes	No	Yes	No	Yes
Region dummies	No	Yes	No	Yes	No	Yes
Observations	1902	1900	1897	1872	1313	1313
R-squared	0.009	0.099	0.033	0.191	0.244	0.258
Baseline Mean Control		2.187		0.780		-
End-line Mean Control		2.237		0.846		-

Note 1: P-values for robust standard errors clustered at the clinic level presented in parenthesis. Randomization inference p-values (generated using the STATA command developed by Hejbl (2017)) are presented in braces (Young, 2019). Anderson's (2008) sharpened False Discovery Rate q-values are presented in angle brackets. Stars are presented for each p-value. ***p < 0.01, **p < 0.05, *p < 0.1.

Note 2: The ex-post Minimum Detectable Effect with 80% power and a 5% significance level based on the actual sample at end-line for number of meals is 0.09, for litres of water is 0.28 and for treated water is 0.06. Results for an intermediate specification only including a control for the baseline outcome are presented in Table C6 of the Appendix.

Difference-in-differences (DID)

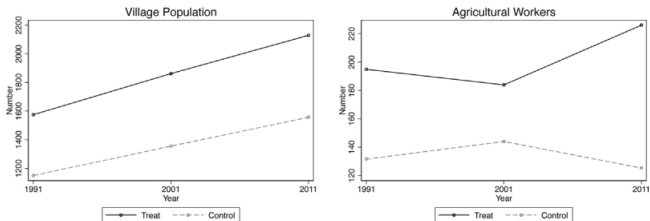
- Key assumption: Parallel trends
 - ▶ Absent the treatment, the treatment and control group would have developed similarly
- What to check
 - ▶ Are the treatment and control groups balanced?
 - ▶ Are the pre-trends parallel?
 - ▶ Dynamic (event study) DID plot?

DID Example

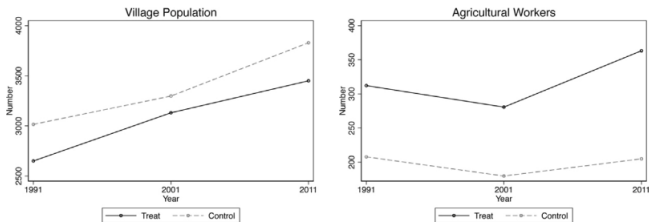
- Rural road infrastructure and agricultural production: Evidence from India - **Yogita Shamdasan** (2021)
 - ▶ Studies the impact of infrastructure improvement on agricultural productivity
 - ▶ Uses a DID setting, utilizing the fact that some villages received the treatment earlier than other eligible villages
 - ▶ Shamdasan concludes that improving the infrastructure to poorly connected villages had a significant positive impact on agricultural outcomes
 - ▶ Let's study how she argues for that the parallel trends assumption holds

DID Example

Panel A: Population Census Outcomes



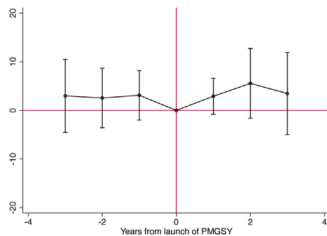
(a) Program-eligible villages



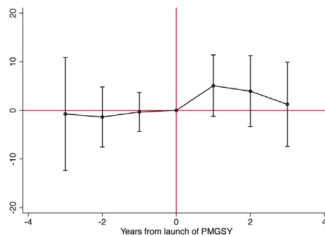
(b) Incidental villages

DID Example

Panel B: Night Lights



(d) Program-eligible villages



(e) Incidental villages

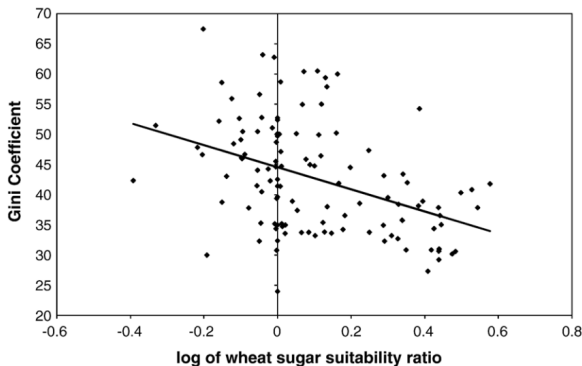
Instrumental variables (IV)

- Key assumptions:
 - ▶ **Relevance:** the instrument correlates strongly enough with the endogenous explanatory variable
 - ▶ **Exogeneity:** the instrument is as good as randomly assigned
 - ▶ **Exclusion:** the instrument Z only affects Y through X
- What to check?
 - ▶ Relevance: F-test static of the first-stage > 10 ?
 - ▶ Exogeneity: Untestable
 - ▶ Exclusion: Untestable

IV Example

- **Easterly (2007)** - Inequality does cause underdevelopment: Insights from a new instrument
 - ▶ Uses a the ratio of land available for wheat and sugar cane production as an instrument for inequality
 - ▶ The available land's wheat/sugar ratio does correlate with inequality, but does the exogeneity and/or exclusion restriction hold?

W. Easterly / Journal of Development Economics 84 (2007) 755–776



IV Example

- Let's look at the first stage

W. Easterly / Journal of Development Economics 84 (2007) 755–776

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Table 3
First stage regression for inequality on wheat–sugar ratio

Dependent variables	Average adjusted Gini, 1960–98	Average adjusted share of income accruing to top quintile, 1960–98
lwheatsugar	–18.328 (5.59)**	–19.133 (6.39)**
Constant	44.555 (48.26)**	49.275 (61.75)**
Observations	118	114
<i>F</i> -statistic	23.64	30.86
<i>R</i> -squared	0.17	0.22

Robust *t* statistics in parentheses.

** significant at 1%.

- Which looks fine. So the issue is, is the instrument really randomly assigned, and is it's the only channel affecting growth through inequality?
- For example, a low wheat/sugar ratio might only be a proxy for tropical countries?

Criticizing the methodology: Data

- It is often difficult to have data on or measure the outcome(s) of interest directly
- Sometimes one has to use what is available
- Is there systematic measurement error?
- Do the authors have data on all variables they should control for?
- Is the data unbiased?

Suggest improvements related to your critique

- What should be done to convince you that the paper should be published?
- For example
 - ▶ Robustness checks
 - ▶ Additional analyses

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Conclusion

- Focus on the main positives and negatives
 - ▶ Minor points are called minor for a reason
- Remember to give suggestions that address your concerns, but be kind
 - ▶ What kind of feedback would you like to have at your master's thesis seminar?