DSPI – Thesis workshop

Quantitative methods

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Overview

Today is a space for you to control however is useful…Really!

1. Some reflections and tips from me on MSc theses with quant research
2. Whole group Q&A session
3. Exercise: work in small groups to read and grade a past thesis
    1. Meanwhile, I will be available at the front for any individual questions you may have on your own theses.

…

Decide what we want to do next week, same again? Or prepare a different kind of session?

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Tips on refining and presenting your quant research –

based on my bug-bears from marking

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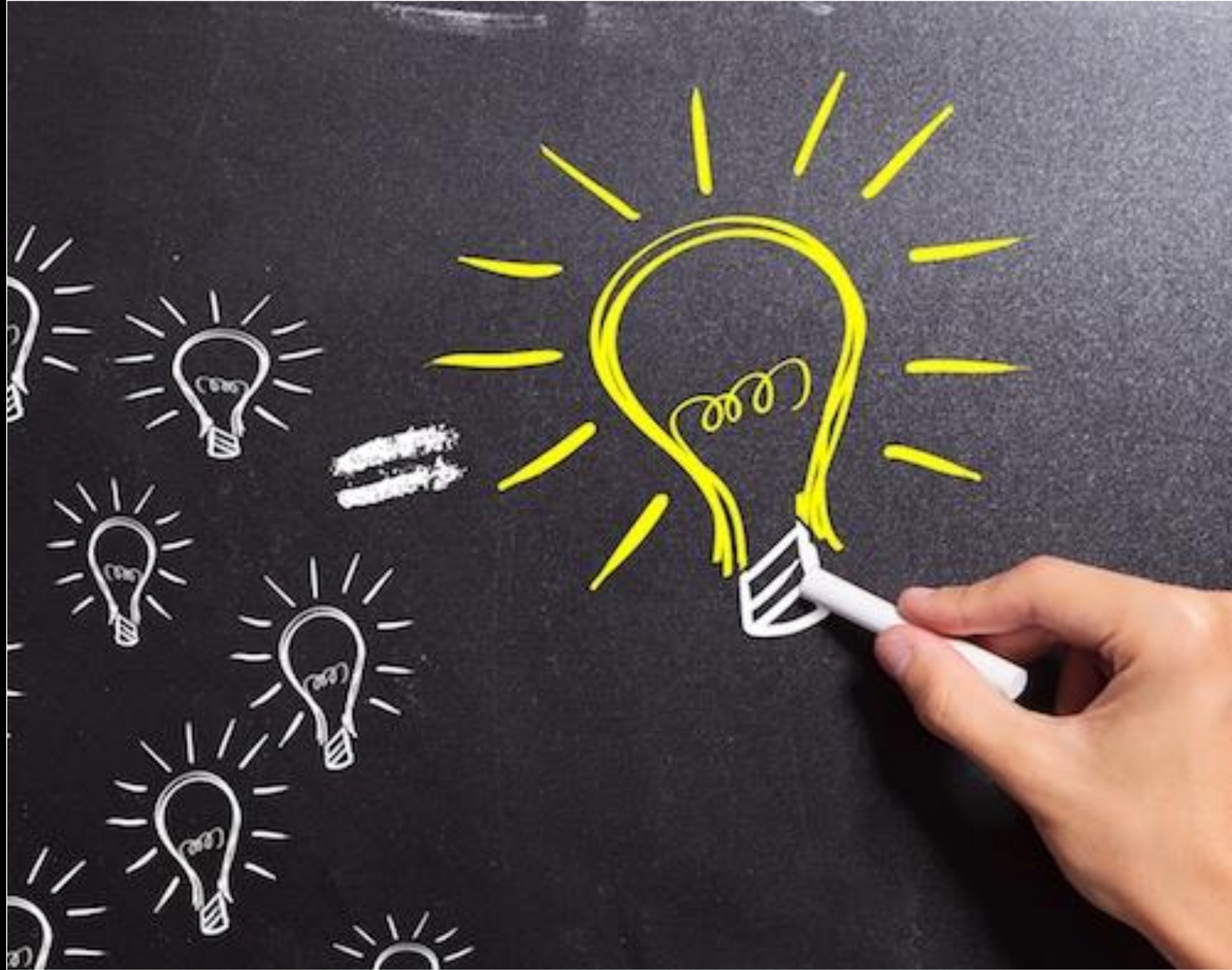

My four informal tips:

- 1) Know the meaning of every technical word in your thesis

- 2) Detail your methods ensuring you:
  - a) Describe your method decisions,
  - b) Explain why you made them,
  - c) Argue about what they mean for your study.

- 3) Display descriptive analyses which communicate the context, the data structure, and your concept of “the puzzle”

- 4) Think beyond the main result.

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Human communication of your methods

- Make sure you understand the words you use in your thesis.

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Human communication of your methods

- We are using methods for the first time, we are sometimes unsure about concepts but…
- Technical language *needs* to be used correctly.
- ChatGPT shouldn’t design your thesis and interpret your results…
  - If you don’t understand the words written in your thesis, I promise it will be obvious.
- Be aware of copying text out of stats books too.
  - It will sound like you don’t have the required knowledge
  - If done incorrectly could land you in trouble for plagiarism
- Try communicating your methods in words you understand.
  - Read the word in five different sources so you get contextual knowledge.
  - Or use another word

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Honesty, reflection and transparency

- Communicate what and why you have made your decisions.

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Honesty, reflection and transparency

- All research is necessarily ‘limited’ – communicating how your science is ‘limited’ displays that you understand the research process.
- You have made a lot of decisions in choosing the variables, analysis, findings… You should:
  - A) Inform readers of the decisions you made.
  - B) Explain to readers why they are the best available decisions – or prove that they don’t matter.
  - C) Describe what your decisions mean for the study, findings, interpretations.
- If you are hiding something to try sound accomplished, the opposite will happen.
  - The academics marking your theses are professionally trained in “reviewer 2 syndrome”.

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3.1 Extensive results – with a purpose (Descriptive analysis)

- Display a full array of data and findings

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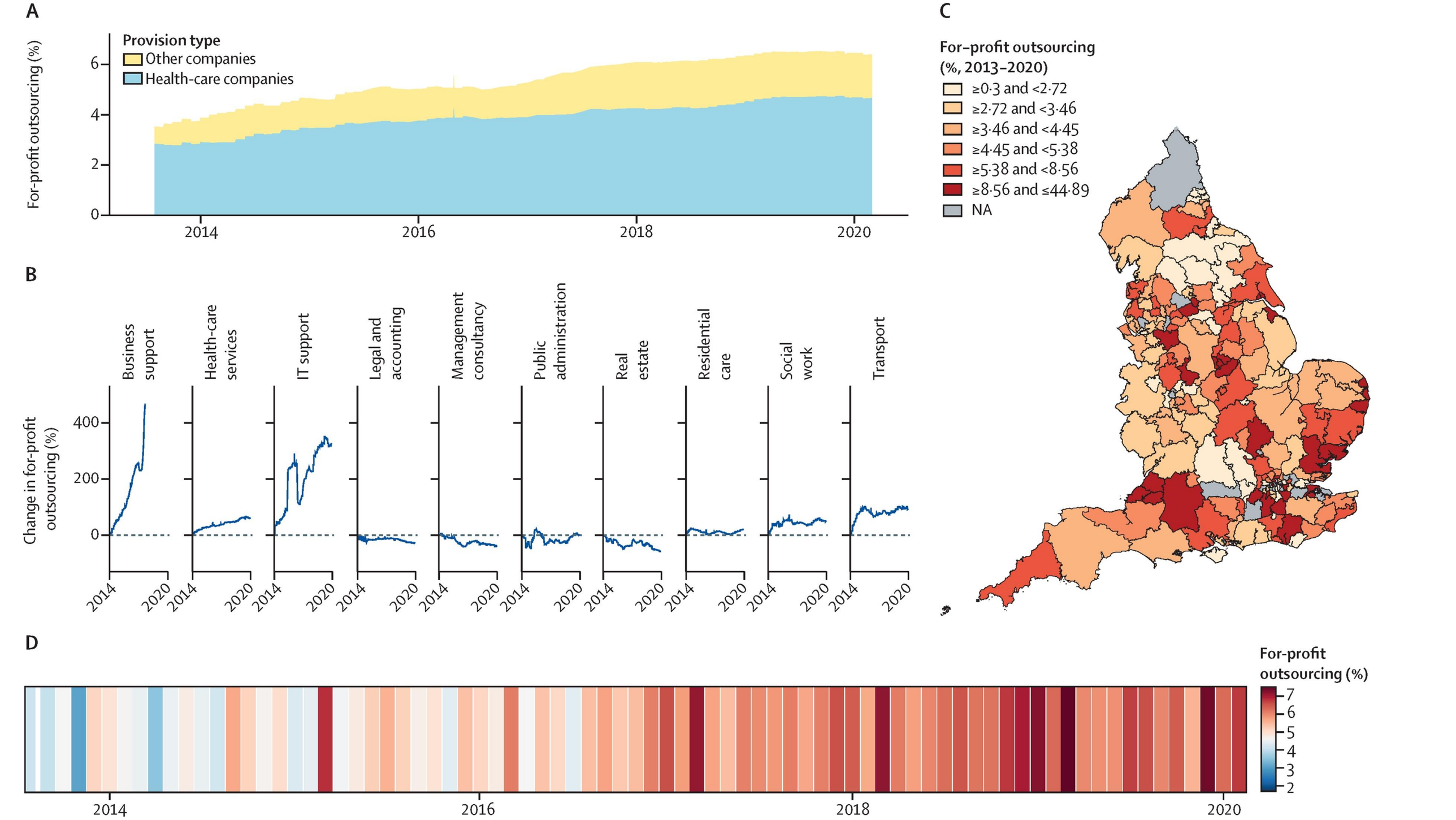
A
Provision type
Other companies
Health-care companies
For-profit outsourcing (%)
0
2
4
6
2014
2016
2018
2020
B
Business support
Health-care services
IT support
Legal and accounting
Management consultancy
Public administration
Real estate
Residential care
Social work
Transport
Change in for-profit outsourcing (%)
0
200
400
2014
2020
C
For-profit outsourcing (%, 2013–2020)
≥0·3 and <2·72
≥2·72 and <3·46
≥3·46 and <4·45
≥4·45 and <5·38
≥5·38 and <8·56
≥8·56 and ≤44·89
NA
D
For-profit outsourcing (%)
2
3
4
5
6
7
2014
2016
2018
2020

3.2 Extensive results – with a purpose (Testing uncertainties)

- Display a full array of data and findings

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Extensive results – with a purpose

- **Don’t neglect descriptive statistics, tables, and figures**
  - These are vital for the reader to
    - A) understand the context (geography, historic trends, variation)
    - B) understand the data (missing data, unit of measurement, sample characteristics)
    - C) understand the relationships and the way you are conceptualizing the “problem”, “puzzle”, “policy” (how you visualize your data will communicate the puzzle because it will reflect your understanding of the scientific enquiry)
- **Get into a mindset of testing your uncertainties…**
  - You will always be the person who bests knows the flaws in your empirics, use this to your advantage
  - Highlight the flaws – then test them.

…

- As long as you can communicate a purpose for each analysis.

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Some tips for sensitivity checks.

- **Two types of sensitivity check:**
  - 1) Variations on the analytical decisions which you consider close to arbitrary – to test for researcher bias.
  - 2) Creative analyses to strengthen the empirical backing of your argument

- **1) Varying analyses**
  - Variable construction; variable inclusion; model specification
    - Only when you think there is no meaningful difference in the interpretation
    - Some journals expect that, if you have a regression with variables, you present bivariate relationship too.

- **2) Strengthening your empirics**
  - Think about what gaps a critic might identify in between your empirics and your interpretation.
    - Is there a third important variable? Is the data biased in how it is collected? Does the effect only impact some areas?
  - Think about analyses which might plausibly test for this.
    - Change the dependent, the independent, the sample, the date…

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Group Q&A

- Any general questions or advice you think others might also contribute/ benefit from hearing?

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Group work

- Navigate to Canvas -> EBSPIE Thesis -> Theses to note 2023/24 -> "Climate Change in Pakistan The Impact of Extreme Heat on Birth Weight"

- Read it as quick as possible – 20 mins – skip the intro, focus on the methods and results from page 11.
- Jot down your immediate three strengths, and three weaknesses
- Discuss it with your groups of 3 – discuss the evidence you found for each strength or weakness.

- Whilst we do this, I am available to answer individual questions people might have about their own theses.

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Group feedback

- What strengths and weaknesses did you identify?
- Did you agree or disagree with your group?
- Did it make you think something about what makes a good thesis?

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My marking

- **Strengths:**
  - The data management, manipulation and presentation was all very high quality and technically advanced.
  - The writing of statistical methods was very clear, advanced, and communicated a high level of understanding of quantitative methods
- **Weaknesses:**
  - Interaction effect misinterpreted!
  - Report statistical significance when reporting effect sizes – and treat them as estimates!

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Next week!

- Same again?

- Or something different?
  - Workshopping individual's thesis issues together – peer support?
  - More of a lecture style presentation on thesis tips, with examples I find and present?
  - I create a synthetic thesis, and we work through issues at different points in the thesis writing timeline (idea -> analysis -> sensitivity -> interpretation -> presentation)?

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