

Report on Bachelor / Master Thesis

Institute of Economic Studies, Faculty of Social Sciences, Charles University

Student:	Tereza Markalousová
Advisor:	Prof. PhDr. Tomáš Havránek Ph.D.
Title of the thesis:	How Does Peer Socioeconomic Status Affect Academic Achievement? A Meta-Analysis

OVERALL ASSESSMENT (provided in English, Czech, or Slovak):

Please provide a short summary of the thesis, your assessment of each of the four key categories, and an overall evaluation and suggested questions for the discussion. The minimum length of the report is 300 words.

Short summary

This thesis employs advanced meta-analysis methods to explore the impact of peer socioeconomic status (SES) on academic achievement. The author collected 449 estimates from 40 studies covering nearly 40 years. The thesis investigates publication bias and heterogeneity in the literature. Statistical tests reveal the presence of publication selection, leading to a smaller effect size than previous findings. Utilizing Bayesian and frequentist model averaging techniques, the study identifies factors influencing the estimated effect's magnitude. Notably, publication bias and specific SES measures like parental education and home resources amplify the effect, while variables like citation count, publication status, science test type, and advanced methodology have a diminishing effect on the estimated relationship.

Contribution

This thesis extends the previous meta-analysis conducted by Van Ewijk & Sleegers (2010) by leveraging a distinctive dataset and employing the latest statistical methods for economic meta-analysis, aligned with guidelines from Havránek et al. (2020). Unlike the prior analysis, which addressed publication bias by examining standard error correlation and found minimal evidence of bias, this research takes a more comprehensive approach. The author utilizes various statistical tests to thoroughly investigate publication bias and its potential influence on the effect's behavior, a dimension largely unexplored in earlier studies. Furthermore, the author has broadened the spectrum of collected variables compared to the previous study, creating a more comprehensive dataset that enhances our research's depth and scope.

I recommend emphasizing why this topic is important in the abstract instead of mentioning "We examine publication bias for the first time in this research area" when it's built up on the previous meta-analysis. Rather state why is the effect of peer SES on AA important and why is meta-analysis needed.

Methods

The author collected 449 estimates from 40 studies, which were found by searching in Google Scholar. The search was completed on May 1, 2023. Overall, the author uses appropriate methods and the methodology is more than sufficient for the bachelor thesis. The thesis follows the guidelines for meta-analysis in economic research provided by Havránek et al. (2020) and the data collection follows the reasoning outlined in the previous meta-analysis concerning this topic, Van Ewijk & Sleegers (2010).

For simplicity, I suggest including the regression equation from the primary studies so the reader is well aware from the very beginning which effects the author collects. Are the estimates comparable? Why the author did not use PCC (partial correlation coefficient)?

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The author uses linear as well as non-linear techniques to detect publication bias. The results range from 0.117 to 0.391 (significant as well as non-significant). The author states that the higher estimates are driven by OECD studies. I recommend controlling for OECD studies or doing some additional robustness checks (FAT-PET on different subsamples, cluster SE by authors, ...). To observe heterogeneity, the author uses Bayesian model averaging accompanied by frequentist model averaging for the whole sample as well as the subsample without OECD studies. In the concluding remarks, the author describes the limitations of the study and proposes nice points for further research.

Literature

The author proved distinct knowledge of such a topic, the effect of peer SES on academic achievement as well as existing meta-analytical tools. Meta-analytic research depends on a thorough reading of the primary studies as well as having a deep knowledge of meta-analytical approaches. The author proved both in her thesis.

Manuscript form

The thesis is well-structured, well-written, and easy to follow. Most of the tables are self-explanatory. However, I have some minor points for improvement. I suggest including the estimated equation (in primary studies) to let readers know what data are collected. Moreover, the description of the data (section 5.1.) would better fit before any analysis, i.e. to section 3.

Other points:

Table A1 – for simplicity, I suggest including the title of the article and the outlet in the table.

Figure 3.1. – I suggest including the value of the sample mean in the figure so it is self-explanatory.

Figure 3.2. – typo: Sui-Chu.

Table 3.1. – I miss the information about the mean when the study is NOT published.

Figure 3.4. – missing. In section 5.1., the author mentions Figure 3.4. which does not exist. When writing in latex, stick to `\autoref{}` when mentioning tables/figures.

Figure 4.1. – sooo tiny. More values on the x-axis, not only min max mean.

Table 5.1. – typos.

Table 5.3. – I suggest to put Table 5.3. with all variables in the Appendix.

Overall evaluation and suggested questions for the discussion during the defense

One can see that the data collection was not easy and that the author did great work. The author demonstrates a full understanding of the topic. The manuscript is well-written and easy to follow. In my view, the thesis fulfills the requirements for a bachelor's thesis at IES, Charles University. The results of the Turnitin analysis do not indicate significant text similarity with other available sources. I have only minor comments, therefore, I recommend it for the defense and suggest a grade of A.

Suggestions for the discussion during the defense:

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1. When detecting the publication bias, the results range from 0.117 to 0.391 (significant as well as non-significant). In Table 3.1 we can see that the sample mean is 0.333 and in Table 4.1. we can see that the corrected mean for publication bias using OLS is 0.33. What does this tell about the publication bias? Moreover, in section 4.4, the author states that even the most suitable instrument is weak. Is it definitely the most suitable instrument then?
2. What is the regression equation in the primary studies? Are the estimates comparable? Shouldn't the author use PCC? Why? I suggest to more specify the estimates from the very beginning.
3. Explain why „For instance, a coefficient of 0.31 would imply that 81% of the estimates surpass the threshold, while the remaining 19% fall below it.,” (p.28, Caliper test)
4. Based on Figure 5.1. – published studies have a negative effect on the estimate of the peer effect (violet color). What does this tell about unpublished studies?
5. What is the variation of the estimates across years? Are there any substantial changes or patterns? I suggest including a figure of that.

SUMMARY OF POINTS AWARDED (for details, see below):

CATEGORY	POINTS
<i>Contribution</i> (max. 30 points)	28
<i>Methods</i> (max. 30 points)	26
<i>Literature</i> (max. 20 points)	20
<i>Manuscript Form</i> (max. 20 points)	17
TOTAL POINTS (max. 100 points)	91
GRADE (A – B – C – D – E – F)	A

NAME OF THE REFEREE: Klára Kantová

DATE OF EVALUATION: 31. 8. 2023

Digitálně podepsáno (31.8.2023):
Klára Kantová

Referee Signature

EXPLANATION OF CATEGORIES AND SCALE:

CONTRIBUTION: *The author presents original ideas on the topic demonstrating critical thinking and ability to draw conclusions based on the knowledge of relevant theory and empirics. There is a distinct value added of the thesis.*

METHODS: *The tools used are relevant to the research question being investigated, and adequate to the author's level of studies. The thesis topic is comprehensively analyzed.*

LITERATURE REVIEW: *The thesis demonstrates author's full understanding and command of recent literature. The author quotes relevant literature in a proper way.*

MANUSCRIPT FORM: *The thesis is well structured. The student uses appropriate language and style, including academic format for graphs and tables. The text effectively refers to graphs and tables and disposes with a complete bibliography.*

Overall grading:

TOTAL	GRADE
91 – 100	A
81 - 90	B
71 - 80	C
61 – 70	D
51 – 60	E
0 – 50	F