

Report on Bachelor / Master Thesis

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

Student:	Van Anh Nguyenová
Advisor:	PhDr. Zuzana Havránková, Ph.D.
Title of the thesis:	How much does intelligence predict lifetime income? 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

The bachelor thesis by Van Anh Nguyenova uses a quantitative research design of meta-analysis to examine the relationship between intelligence and individual income. Van Anh Nguyenova collects 765 estimates of the effect of intelligence on financial returns reported in 38 studies and reveals publication bias in the literature: positive and statistically significant estimates are preferably selected for publication. After correcting for publication bias, persistent evidence for a significant intelligence-income effect beyond bias remains in the literature. To explain the heterogeneity in the estimates across empirical literature, the author uses Bayesian Model Averaging, which is a reasonable choice given the high number of potential explanatory variables. As no meta-analysis was conducted separately for economic literature that studies the effect of intelligence on individual income, I believe that the author's analysis makes a nice contribution to the literature.

Contribution

Compared to available psychological studies, which concentrate mainly on the investigation of zero-order correlations between general ability and individual income, this thesis covers available economic literature and focuses on the marginal effects of intelligence. The author goes beyond the scope of existing synthetical studies and collects 765 estimates of the effect of intelligence on financial returns reported in 38 economic studies.

Methods

Various meta-analytical techniques are applied in this thesis. The author uses both classical meta-regression methods (funnel plot, Funnel Asymmetry, and Precision Effect tests) and also utilizes novel procedures for publication bias correction: Top 10 method by Stanley (2010), a weighted average of adequately powered estimates proposed by John Ioannidis (2017), stem-based correction by Furukawa (2019), endogenous kink method by Bom & Rachinger (2019), selection model by Andrew & Kasy (2019), caliper test. To address model uncertainty inherent to meta-analysis the author uses Bayesian model averaging with different priors and frequentist model averaging as a robustness check.

In the thesis, Van Anh Nguyenova applies the methods that were not covered in the studies at IES, and she demonstrates a solid understanding of the meta-analytic approach. Hence I appreciate the great efforts that the author has made not only to collect her own dataset, but also to learn numerous challenging concepts.

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I have a minor comment regarding the data collection process. According to the recommendations of Havranek et al. (2020), after initial examination of the first 500 studies determined by the Google search, it is necessary to apply the so-called snowballing method to review research papers included in reference lists of the previously inspected studies. Did the author utilize this method at the data collection stage of the analysis?

Literature

The thesis demonstrates a comprehensive review of the theoretical and empirical studies assessing the relationship between intelligence and individual income. As far as I am concerned, almost all the relevant studies in the text are properly referenced. The exception is “Damian & Spengler “ (pg.14).

Manuscript form

The thesis is written in competent English. Perhaps the writing style can be improved: the text is unnecessarily complicated at times, and some phrases sound non-academic (such as: „admirably uncomplicated“; „...we can conclude that intelligence tests do measure something — more or less a person’s samples of behavior...“; “ without further ado, we will now delve ...”). On the other hand, the thesis is typesetted in LaTeX, which makes the work nicely formatted.

Overall, I find the manuscript well organized except for the section that is called Our Contribution. I believe it would be preferable for the readers’ orientation to discuss the contribution in the introduction and conclusion sections of the thesis. I would also recommend changing the titles of several chapters (e.g. 2.2 Intelligence, 2.3 Financial Returns) for better readers’ understanding.

Several issues are:

- Some information seems to be confusing in Table 4.1. The last row is labeled as Constant. I believe that the results provided in this row represent the standard errors of the effect beyond publication bias.
- Equations 2.1 and 2.2 that represent the commonly used regression model look strange without subscript ‘i’ in each equation. The notation using subscripts is the standard way to express the regression model, and if the author does not use the subscript, then it is unclear what the author is referring to. The slope coefficients are indicated with the hat symbol, which is not correct. Also, the description of the equations is inaccurate.
- 38 studies included in the meta-analysis are mentioned in the abstract and introduction, only 34 later in the conclusion section (probably a typo).
- The acronyms are not ordered alphabetically in the list of acronyms at the beginning of the document.

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- I believe the author should include the table with the primary studies in the main body text rather than in the Appendix.

Overall evaluation and suggested questions for the discussion during the defense

Van Anh Nguyenova has conducted an interesting study, and the results she presents are significant for the literature. Overall I would say that the meta-analysis presented in the thesis is very well performed but not perfectly presented. I suggest grading the thesis with a B or higher depending on the committee's evaluation.

Suggested question:

The estimates collected from the literature may differ in their measurement units and econometric specification even after performing the data adjustments. There is one transformation technique that is not used in the thesis, Partial Correlation Coefficient (previously employed by Doucouliagos & Laroche (2003), Havranek *et al.* (2016), Cazachevici *et al.* (2020)). Could the author explain how this approach varies from the techniques used in the thesis?

The results of the Urkund analysis do not indicate significant text similarity with other available sources.

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

CATEGORY	POINTS
Contribution (max. 30 points)	28
Methods (max. 30 points)	28
Literature (max. 20 points)	18
Manuscript Form (max. 20 points)	14
TOTAL POINTS (max. 100 points)	88
GRADE (A – B – C – D – E – F)	B

NAME OF THE REFEREE: Mgr.Ing. Kseniya Bortnikova

DATE OF EVALUATION: 29.08.2023

Digitally signed (29.08.2023)
Kseniya Bortnikova

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