

Report on Bachelor Thesis

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

Student:	Valentin Schnabl
Advisor:	PhDr. Jana Votápková, Ph.D.
Title of the thesis:	The pay-off of increased physical activity in the Czech Republic: A cost-benefit analysis of offering people financial incentives to alter their exercise behavior

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 thesis calculates costs connected to insufficient physical activity. It takes the epidemiologic approach and considers five diseases only. The observed results are compared to the results from the literature. The author nicely deals with two conflicting arguments in the literature as to how to define exposure to physical activity. From these two arguments, the author creates upper and lower bounds for his model.

The thesis finds that large doses of PA disproportionately affect diabetes and breast cancer compared to small marginal increases of PA whereas even small additional doses of PA already decrease ischemic stroke and ischemic heart disease at the same rate as large doses of PA. This is an interesting finding for public policy.

In his cost-savings model, the author estimates healthcare savings under different scenarios when PA activity increases. In the first scenario, it is assumed that physical activity increases steadily over 30 years. The second scenario assumes that the incentives work on previously inactive adults, whereas but the effect wears off when the people have reached certain level of PA. Under both scenarios, the author finds large cost-savings when physical activity increased.

Contribution

The contribution to the existing literature is obvious. At the same time, the thesis contributes to public policy that could use the results to design e.g. diabetes prevention programs.

Methods

The methods used are well explained, backed up by the literature and appropriate for the purpose of the study.

Literature

Literature review is well written, author's ideas are nicely set into the context. Citations are sufficient except for a few typos in the LaTeX command.

Manuscript form

The thesis reads well, it is easy to follow authors flow of thought. The thesis is a very good attempt for an academic work and the author has a good potential to write good academic papers after some further training.

Overall evaluation and suggested questions for the discussion during the defense

Valentin finally wrote a very good piece of academic work for bachelor level standards after initial issues both in our cooperation and his style of work. As his thesis supervisor, I must admit that the beginnings of our cooperation were difficult. I could sense that at the beginning of our cooperation he thought that writing a bachelor thesis was going to be fairly easy with not much work.

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However, after our discussions he accepted my requirements worked hard and eventually did a very good job and his academic progress was excellent. He learnt a lot while writing the thesis.

I particularly like the way Valentin dealt with the conflicting arguments from the literature when defining exposure to physical activity. In order to be utmost objective, he created upper and lower bound of PA exposure which gives him a floor for discussion and further hypotheses for future work.

I have only one comment which concerns financial incentives used for the cost-savings model (CSM).

The author constantly repeats that in the CSM financial incentives are used to increase physical activity. It may thus seem that he assesses people's response to financial incentives the result of which is increased physical activity. However, the level of financial incentives were taken from the literature as I read it. Valentin's conclusion then is that it does not pay-off to offer people financial incentives to increase physical activity. Of course, when US incentives are applied to the Czech context, given purchasing power parity, costs exceed savings.

Nevertheless, comparison of costs and savings should not be understood as the main contribution of the thesis. The main contribution of the thesis, as I read it, is the calculation of healthcare costs that increased physical activity brings. It is beyond the scope of the thesis to calculate how the people respond to incentives to reach the desired levels of physical activity. In other words, were financial incentives set at lower levels resulting in the same increase of physical activity, the author would have concluded, that financial incentives pay off.

I suggest stressing at the defense, that financial incentives is just a hypothesis. What matters in the thesis is increase in physical activity and its subsequent cost savings. How the government makes the people increase the people's physical activity is irrelevant and is beyond the scope of the thesis. Setting up the incentive structure specific to the Czech Republic is a motivation for a micro analysis in a further research.

Thus the title is a little misleading too. The latter part of the title, "...a cost benefit analysis..." should be excluded.

Minor comments:

- I miss a table of METs assigned to each PA category.
- Prevalence of diabetes – specific prevalence rates for 30 years ahead were calculated for CZ, available here: <https://jana-votapkova.shinyapps.io/diabetes/> Maybe try replicate the model with these rates in future research.
- Figure 3.2. – names of axes are missing
- P. 18 typo – Hafner
- Formulas are not numbered
- Formula on p 18 – sum across only the diseases the author deals with or across the whole healthcare system?
- Mistakes in citations – cite instead of citep on page 27

Despite my comments, the thesis fulfills the requirements for a bachelor thesis at IES, Faculty of Social Sciences, Charles University, I recommend it for the defense and suggest a grade A

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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)	25
Methods (max. 30 points)	26
Literature (max. 20 points)	20
Manuscript Form (max. 20 points)	20
TOTAL POINTS (max. 100 points)	91
GRADE (A – B – C – D – E – F)	A

NAME OF THE REFEREE: PhDr. Jana Votápková, Ph.D.

DATE OF EVALUATION: August 19, 2022

Digitally signed (19.8.2022)
Jana Votápková
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