Report on **Master Thesis**

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

Student:	**Adéla Pavelková**
Advisor:	**Mgr. Barbara Pertold-Gebická M.A., Ph.D.**
Title of the thesis:	**The Effects of Different Malaria Prevention Measures: Panel Data Analysis**

OVERALL ASSESSMENT:

Contribution

The author presents original ideas on the topic.
According to the author, the value added of her study is that the analysis is performed on cross-country data from all over the world, which, according to her, allows the analysis results to be generalized. The first part using regression analysis brings obvious value added (exploring statistical significance of various malaria preventive measures contribution to decreasing malaria deaths).
The second part of analysis, using clustering, somehow misses the point in conclusion. In my opinion, the analysis could have proceeded further and elaborated the analysed topic in economic consequences as well. Answering questions such as whether financial resources of international organisations are well invested, whether there is a good value for money spent, what malaria preventive measure is the most cost-efficient, etc. could enrich it. This could have been drawn, for example, based on the clustering analysis and/or regression analysis, and using for instance the study of A. Hailu et al (2018), cited by the author, which calculates the costs of long-lasting insecticide nets and indoor residual spraying.
The Conclusion chapter is a summary of thesis findings (analysis outcomes), but it lacks a kind of synthesis on what do the findings mean? Perhaps one way to bring it to an economic context is the one described in previous sentences.

Methods

The statistical methods used are relevant to the posed research question and adequate to the author's level of studies (regression analysis using fixed effects as well as random effects, bootstrapping to control for stability of results; clustering analysis).
In my opinion, the thesis topic could be yet enriched by using the regression analysis results to classify cost-efficiency of different preventive measures. While using clustering analysis outcomes, it could answer whether a preventive measure investment strategy deserves a change in a particular country. Some recommendations are outlined in the last parts of the thesis, but, in my opinion, the presented clustering does not support them fully. For instance, it is not clear from the analysis why *"when the situation with malaria improves, rapid diagnostic tests should be delivered. However, as seen from our results, this is valid only for countries with better conditions*".

Literature

The thesis demonstrates author's understanding and command of recent literature.
The author quotes relevant literature in a proper way.

Manuscript form

The thesis is well structured with some minor imperfections. Some polishing could have been done to chapters 2 (or 3), 5 (Data), 6.2 (Variables), and 7 (Results) regarding data and variables description. Ch5, though titled "Data", describes malaria preventive measures, but not the data in full (this is described in 6.2 and at the beginning of Ch7 Results = where the data is from). Preventive measure description would better fit in chapter 2 (or enlarging the topic of chapter 3). On contrary, Ch5 lacks information on what units are used for listed variables (in tables 5.1, 5.2), whether presented numbers are standardized (per 1000 population, for example) or in absolute numbers, whether GDP per capita is in USD, EUR, or PPP,…? For instance, rural population seems to be presented in absolute numbers - perhaps rural population in % of total population would better fit the analysis.

The author uses appropriate language and style, including academic format for graphs and tables. The text disposes with a complete bibliography.

Summary and suggested questions for the discussion during the defense

Overall, the author demonstrates well her ability to apply gained econometric knowledge while analysing chosen topic. Exploring contribution of malaria preventive measures to malaria deaths is an interesting topic and definitely worth the interest given how much it costs and given the productivity loss malaria causes worldwide. In this regard, a more pronounced economic context of the topic throughout the theses, and with regard to its conclusions, would be beneficial for the overall thesis impression and meaning.
Suggested questions for discussion during the defence:

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1) Did you consider any other control variable or proxy than rural population to account for different geographical situation and landscape that may influence malaria prevalence in different countries? What about for instance a country's share of swampland versus deserts, or highlands versus lowlands?
2) You write that some countries have been reported by WHO as countries erasing the malaria in 2018 and 2019, or countries that have reached a year without malaria cases. Did you include these countries in your dataset? If not, would their inclusion change the results? Obviously, these countries had to invest a lot to combat (or even erase) malaria and most probably continue to use malaria preventive measures. Do they have anything in common that could explain why specifically these countries have succeeded?
3) Did you try to include time dummies? Or continent dummies in the general regression? I suppose the number of malaria deaths is highly correlated with the prevalence of mosquitoes in a given year. Are there any studies analysing weather conditions and malaria prevalence or malaria deaths? What does it influence? I.e. a dummy for above-average humidity years? Could this explain why some countries have moved around your clusters several times as the time went?
4) Did you think of linking the clustering analysis anyhow to the regression analysis performed earlier? For example, it seems the clustering analysis uses the same variables for setting the clusters as the regression analysis. The regression analysis concludes that some of the variables are insignificant. What would happen with the clustering analysis if some variables were erased from it? (the first idea would be to omit variables that turned out insignificant or unstable?)
5) Please elaborate on the idea of including a cost-effectiveness analysis using your regression results (or pitfalls of running such an analysis). Can you use your regression results to state which of the preventive measures are most cost-efficient (if at all cost-efficient) on the international level? In CH4, you cite A. Hailu et al. (2018) that "it was shown that the cost of long-lasting insecticide net per person for one year is 1,06 USD and for indoor residual spraying it is 3,07 USD".

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

CATEGORY		**POINTS**
Contribution	*(max. 30 points)*	26
Methods	*(max. 30 points)*	26
Literature	*(max. 20 points)*	20
Manuscript Form	*(max. 20 points)*	18
TOTAL POINTS	*(max. 100 points)*	**90**
GRADE	**(A – B – C – D – E – F)**	**A**

NAME OF THE REFEREE: PhDr. Lucie Bryndová
DATE OF EVALUATION: May 28, 2020

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**