Report on Bachelor / Master Thesis

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

Student:	**Valeria Efimenko**
Advisor:	**Mgr. Daniel Vach**
Title of the thesis:	**Alternative Approach to Measuring Development Progress of Countries**

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

Contribution

The author studies a well-being indicator called Social Progress Index (SPI). The standard approach of calculation of SPI is to take the average of 3 main variables: Basic Human Needs, Foundations of Wellbeing, and Opportunity. Each of these variables is the average of its 4 minor variables. The author questions if taking averages (= taking same weights for all the variables) is the right approach. The author tests the minor variables and its relevance by Principal Component Analysis (PCA) effectively identifying if all the variables are needed or to be considered with the same weight. By using PCA, the author aims to identify the strong correlation of some minor variables thus improving the SPI model quality. The result of this exercise was to include all the minor variables to determine main variables.

Three hypotheses are tested (in my words): H1) Countries with high SPI does not have to have high GDP. H2) Each of 3 main variables is dependent on its 4 minor variables. H3) Best model for SPI uses all 12 minor variables.

K-means clustering analysis and scatter-plotting the data is used to evaluate H1. Relations but also noise is found. The Bayesian model averaging approach is used to determine the result of hypotheses H2 and H3. The conclusion is that the main variables are truly dependent on 4 minor variables (H2), but H3 test brings more interesting results. The author found that standard SPI could be dependent on only 4 minor variables instead of 12 as there is a large correlation of other minor variables. That would effectively mean that standard SPI measurement unintentionally places more weight on certain variables and thus distorting the overall grading of countries.

Methods

The author uses K-means clustering to determine how many country clusters there are. The principal component analysis is used to determine which components/variables to include. The Author also uses Bayesian model averaging. Methods are very well described in the methodology section. The author also uses a lot of data visualisation such as scatter plots and charts to provide more evidence for her analysis and results.

Literature

Literature overview covers comparison of GDP and SPI and widely describes the origin of GDP as a measure of the economic development. It is argued why SPI can be a better metric to measure the well-being of the nation than GDP. SPI and its relation to Gini index is then discussed. Various other wellbeing indices are covered. Generally, literature overview is rather narrow and does not go into depth of SPI literature. The author did not mention many references.

Manuscript form

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The structure of the thesis is clear. The thesis is easy to navigate. The author followed standard thesis format recommendations. Tables, Equations and Figures are labelled properly. There are quite a lot of typos and some grammar mistakes.

Summary and suggested questions for the discussion during the defense

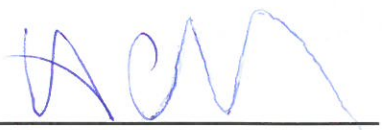
The author covers an interesting topic of well-being measurement indices. It argues for SPI as a better index compared to GPD for measuring the wellbeing of a country but on the other side it also questions the standard calculation method of SPI and if it can be improved. The thesis is a little bit hard to follow as there is often not articulated connection between various parts of the thesis. I am missing strong conclusion covering implications of the work. Although the results have questionable scientific relevance, the author showed the ability to use advanced methods appropriate to analyze the selected problem to its detail. That is why I suggest C. Suggested questions are: What is the most impactful result of the thesis? How would you evaluate the contribution of the thesis – are country results of your approach or questioning the current methodology more important?

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

CATEGORY		**POINTS**
Contribution	*(max. 30 points)*	20
Methods	*(max. 30 points)*	28
Literature	*(max. 20 points)*	12
Manuscript Form	*(max. 20 points)*	16
TOTAL POINTS	*(max. 100 points)*	**76**
GRADE	**(A – B – C – D – E – F)**	**C**

NAME OF THE REFEREE: Daniel Vach

DATE OF EVALUATION:



Referee Signature