



Diploma Thesis Evaluation Form

Author: **Susann Wilson**

Title: **An analysis of the new importers of plastic waste after China's ban on imports in 2017**

Programme/year: MAIN/2023

Author of Evaluation (supervisor): Jakub Tesař, Ph.D.

| Criteria | Definition | Maximum | Points |
|-----------------------|---|------------|--------|
| Major Criteria | | | |
| | Research question, definition of objectives | 10 | 9 |
| | Theoretical/conceptual framework | 30 | 25 |
| | Methodology, analysis, argument | 40 | 24 |
| Total | | 80 | 58 |
| Minor Criteria | | | |
| | Sources | 10 | 10 |
| | Style | 5 | 4 |
| | Formal requirements | 5 | 5 |
| Total | | 20 | 19 |
| TOTAL | | 100 | 77 |



Evaluation

Major criteria:

The submitted thesis discusses the intricacies of international trade with plastic waste. It focuses on the period since 2017 when China, previously the major importer of plastic waste, banned further imports. The thesis aims to map why other countries replaced China by importing plastic waste and explore possible explanatory factors. The author proposes four types of explanatory variables (economic development, trade relations, environmental regulations, and social justice) and seeks to test which are relevant using multi-linear regression analysis.

The thesis comes with a **clear and relevant research question** – who the new importers are (which is somehow trivial with the data) and what leads countries to become importers. The hypotheses proposed in the thesis all make sense concerning the discussed literature. The descriptive insight into the case shows that the patterns of international trade with plastic waste changed in the studied period. Moreover, after an initial peak in imports, the author showed that several countries returned to smaller numbers. This possibly suggests more complex dynamics of redrawing international trade than explored with the linear models.

Multi-linear regression analysis is used to test the proposed hypothesis. Since the model creates a crucial component of the thesis, I will discuss some of its aspects in detail.

I found the **construction of some dependent variables partly unconvincing**, namely the “average relative change,” which measures the change in imports from 2016 and then takes the average of the three years. A gradual increase (each year from a bigger basis) would be better captured with the exponential function instead. For the overall argument, **it would be beneficial to pick one or two versions of the dependent variable** (most relevant according to the author) **and discuss them in detail**. In my view, the most relevant is the increase in imports related to the overall size of the economy (aka IDV number 3 (p. 35) but with the relative change).

The thesis works with a **high number of independent variables**. The operationalization of the majority of them is plausible, but some are not well argued in the text. First, I was surprised to find that HDI and poverty measures are included under social justice – they are usually considered as (more advanced) development indicators. Secondly, I am not sure how FDI (both countries with and without FDI can import waste) or trade balance (both countries with large and small trade balances can import waste) follow from the discussed literature. Thirdly, environmental regulations are not effectively included in the model – this would be possible if coded as a categorical variable. But replacing it with measurable indicators like waste emitted to the ocean is insightful.

My **main concerns relate to how the multi-linear regression analysis is used in the thesis**. The thesis does not explain satisfactorily why variables are divided into seven



groups. Generally, one should not combine variables that aim to address the same hypothesis or correlate with each – As a start; I would expect 4 DVs in each model and variation between those different operationalizations. Specifically, the model should avoid using variables that (probably) correlate to a high extent (like GDP per capita and poverty line, HDI and democracy, FDI and trade openness, etc.). Models presented in Figures 16 and 17 are the opposite and cannot give meaningful insights.

When interpreting the results, I **found several highly problematic conclusions**. It is incorrect to dismiss the result if the coefficient is small but statistically significant. A high value of R square in the thesis cannot be attributed to the quality of the models. It is mainly a **result of overfitting, as the author tries to fit a limited number of observations (11) with many variables (5-7)**. The coefficient for the GDP variable is highly surprising. It is precisely 0,00 in all models, which probably points out some crucial error in constructing the models. It is **unrealistic that for IDVs 1,2,4, GDP (size of the economics) is without any effect** (not only significant but any). Similarly, GDP per capita is a significant indicator in the models but is always present alongside GDP. My expectation is that since GDP per capita and GDP largely correlate, the effect is shown for the first and not for the second variable. Unless the model returns some meaningful results for the GDP coefficient, it is not possible to talk about the exact effect of the economic variable, in my view.

Minor criteria:

The thesis is written in good academic English. The argument is well-structured and relatively easy to follow. Some lexical, grammatical, and syntactic errors exist, but the argument is straightforward. The author used the figures well to illustrate the data/models, which could be otherwise hard to follow. The thesis properly uses academic sources.

Assessment of plagiarism:

The plagiarism check has not revealed substantial overlap with existing sources.

Overall evaluation:

In my view, the author did an excellent job of defining the topic, reviewing the literature to define plausible hypotheses, and operationalizing them for the models. However, the execution of the multi-linear models suffers from the issues mentioned above. The discussion of the results is appropriate but builds on the flawed models and cannot provide conclusive results.

Suggested grade: C

Signature: