

# Report on Master Thesis

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

<b>Student:</b>	<b>Vojtech Nedved</b>
<b>Advisor:</b>	<b>Jozef Barunik</b>
<b>Title of the thesis:</b>	<b>Careless Society: Drivers of (Un)Secure Passwords</b>

## **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 under review aims to explain behaviour of users in password management. With help of unique data author builds a robust model that identifies some of the drivers of username and password similarity as well as attempts to explain reuse of passwords, both poor practices affecting security. Author documents structural differences between countries and languages, sentiment as well as cybersecurity and diversity of password. The thesis is a very original and interesting work.

### **Contribution**

The thesis contributes to our understanding of how people behave when choosing password. To study such complex question, author builds his own model, derives data and sentiment analysis of passwords. The thesis identifies factors that are key for improvement of password policies and hence security which is becoming a crucial topic for our society in future decades with possibly large economic impacts.

### **Methods**

Author works with very large database. The first important part of the methodology was data identification and cleaning to prepare the data for analysis. Second, author formulates the problem using ordered logistic regressions to smartly model probabilities of the choices. Estimation of such model with the large dataset itself is a challenging task, and author had to deal with number of numerical and optimisation issues. Final successful model is then robustly tested using Bayesian model averaging

### **Literature**

Vojtech works with all relevant literature properly, introduces the power and carbon markets very nicely and discusses all relevant sources in sufficient detail.

### **Manuscript form**

The text is very well written, logical, well-motivated, explains problem as well as methods in sufficient detail. In the analysis and results section, this becomes a burden and it is hard in number of places to keep track of what author is attempting to show. This is indeed connected to the level of detail and problem author studies. Yet, slight distance from the detail better guiding the reader would help better orientation.

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## Overall evaluation and suggested questions for the discussion during the defense

In conclusion, I believe that during the work Vojtech proved himself to be an independent researcher, he obtained interesting results, mastered advanced methods, and mastered skills to deliver sound and economically relevant work. Hence the thesis deserves to be defended without doubts. In case Vojtech is confident in presenting the details of the work during the defense, I suggest to award the work with grade "A".

I need to stress that Vojtech worked on the thesis for long time and discussed all steps very carefully and regularly with me, so I do not have further questions for the defense. I only suggest Vojtech could explain committee why the security of passwords is becoming an economically relevant problem, and how can his results help us with this respect. Finally, the results of the Urkund analysis do not indicate significant text similarity with any other available sources.

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

<b>CATEGORY</b>	<b>POINTS</b>
<i>Contribution (max. 30 points)</i>	30
<i>Methods (max. 30 points)</i>	30
<i>Literature (max. 20 points)</i>	20
<i>Manuscript Form (max. 20 points)</i>	16
<b>TOTAL POINTS (max. 100 points)</b>	<b>96</b>
<b>GRADE (A – B – C – D – E – F)</b>	<b>A</b>

**NAME OF THE REFEREE:** Jozef Barunik

**DATE OF EVALUATION:** 18.5.2021

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**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