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THE IMPORTANCE OF FINANCIAL LITERACY AS A PREVENTING FACTOR OF YOUTH INDEBTEDNESS IN FINLAND

Bachelor's thesis

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I hereby declare that I have compiled the thesis independently
and all works, important standpoints and data by other authors
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TABLE OF CONTENTS

ABSTRACT

The importance of financial literacy has been highly noted in the world and it has been part of the discussion, especially among young people. Its effects on different financial issues have been examined to improve people's financial knowledge and financial management.

In this thesis, the financial literacy concept will be studied and connected to Finnish youth's indebtedness. The thesis analyses how financial literacy can influence indebtedness and what are the reasons for a higher indebtedness among young people. To be able to achieve the purpose of this thesis, Ordinary Least Squared regression will be conducted by using data about indebtedness in Finland and to find the variables which have a noticeable effect on indebtedness.

The results of this thesis show that the main factors affecting indebtedness are life changes, for example having children or getting a housing loan and aging has also a positive effect on total debt. For young people, study loan is one factor that increases debts. Financial literacy has a wide effect on indebtedness, and by increasing financial knowledge the amount of total debt can be reduced.

Keywords: indebtedness, financial literacy, Finnish youth, over-indebtedness

INTRODUCTION

Young people are often in the middle of the change, moving from the parental home, living for the first time alone and, having to take care of all the expenses that previously might have been taken by their parents. It is not easy to make a budget and calculate how much money is available for use if they do not have any financial knowledge. Young people are identified as one of the risk groups to get financial issues as their level of financial literacy is low (Cordero et al. 2020). This might be causing young people to have unnecessary debts and default notes if they are not aware of the consequences of not paying bills on time or do not have the needed resources to finance their spendings.

The lack of financial literacy is a concerning factor when discussing indebtedness. People are willing to consume more, even though they are not financially capable of doing it. This might lead to a situation where they try to fill this gap with credit cards and other loans that are easily available. In the worst case, this can lead to the cycle of debt where the income is no longer enough to cover the expenses. Then, people are facing a situation where they have to take new loans to be able to pay the old loans back (Raijas & Lehtinen 2010). This is a problematic situation as people might feel “trapped” in the cycle and cannot find any way out but keep going with the same strategy.

Indebtedness has been a hot discussion topic for a while as the amount of debt among households has been increasing in general after the economic crisis (Hiilamo 2021). In addition to mortgages, study loans, and other loans provided by banks, there are also so many financial companies advertising and offering fast possibilities to get credits. It has been made easy to get a credit on short notice, which incentives people to request it without actually thinking about their ability to pay them back. As Yle Uutiset (2019) writes in the news article, people in Finland are taking new loans to avoid default notes by paying their current loan installments with the new loans. This might cause some misleading indebtedness statistics, as these people are still struggling with their finances but have been able to avoid the possible consequences.

The main objective of this thesis is to investigate the relationship between financial literacy and its effects on youth indebtedness in Finland. The topic is important to better understand what might cause an increase in indebtedness and find possible solutions for how it could be avoided.

Lately, interest in financial literacy has been increasing and its importance has been noticed more and more. Even though financial literacy is being seen as an important part of youth education, the schools and teachers are having the freedom to choose whether or not they cover topics related to financial literacy in their classes. (Cordero 2020) The importance of financial literacy as an avoiding factor of indebtedness among youth needs further investigation and concentration, to be able to provide youth a precise financial education that could lead them to do more sustainable financial decisions. For that reason, in this thesis the author tries to find answers to the following questions:

1. How do the changes in youth financial literacy affect their indebtedness in Finland?
2. What are the reasons behind young adults getting indebted?

In this thesis, the focus will be on indebtedness among young people between 16-34 years old and investigate how their financial literacy levels affect the possibility to end up over-indebted. Winter (2019) shows in the research of young adults' payment defaults, that people with low-income levels are facing larger opportunities to go over-indebted. In that study is also suggested that it is important to help young adults with proper guidance of financial issues, to be able to avoid the national indebtedness crisis. The Organization for Economic-Cooperation and Development (OECD 2020) by the Programme for International Students Assessment (PISA) 2018 shows that most of the countries are starting to focus more on the financial knowledge of their inhabitants. The importance of financial literacy has been, hence, marked on many countries and that is a positive effect as the better levels of financial knowledge might be able to reduce indebtedness and poverty.

1. THEORETICAL OVERVIEW

This chapter is divided into four subchapters. The first subchapter explains the background information and definitions of financial literacy and indebtedness. The second subchapter concentrates on the youth and their financial literacy. The third subchapter introduces indebtedness among youth. The fourth and last subchapter connects financial literacy and indebtedness to Finnish young adults.

1.1. Background and definitions

Financial literacy has many different definitions. The OECD defines financial literacy among young people as follows: “Financial literacy is knowledge and understanding of financial concepts and risks, and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts, to improve well-being of individuals and society, and to enable participation in economic life” (OECD 2020, 43). It includes the thought of having the needed knowledge, but also that people can interpret it into their daily financial-related problems (OECD, 2020). Lusardi and Mitchell (2011) determine financial literacy as the capability of being able to calculate simple calculations and being aware of financial concepts. Gathergood (2011) also refers to financial literacy as the ability to know financial concepts and to be able to explain financial data. Shafir and Naghavi (2020,165) explained financial literacy “as the ability to understand and use financial knowledge to make sound financial decisions”.

Garg and Singh (2017) write, in their article, about how the meaning of financial literacy has developed during the years. OECD (2020) mentions that financial literacy can be affected by three main factors: financial knowledge, financial attitude, and financial behaviour. Financial knowledge is introduced as the most important role of creating financial literacy (Garg & Singh 2017) as it has been noticed that higher knowledge of financial concepts leads to better financial decisions (Brabenec et al. 2020). Financial knowledge is a valuable quality in today’s world because there are a wide variety of different financial products easily accessible (Klapper et al.

2015). Financial attitude is how a person acts towards financial issues, for instance with saving money or budgeting (Dua et al. 2019). Lastly, financial behaviour is related to interpreting financial actions (Garg & Singh 2017), and it means that a person with a high financial behaviour level can conduct good decisions regarding financial matters, which increases the state of financial literacy (Dua et al. 2019). Regarding OECD (2020), financial behaviour plays an important role in changing financial literacy as the persons' actions of saving money or consuming it, can have either a positive or a negative effect on their financial status.

Financial literacy levels have a wide effect on people's financial actions. The more people are financially literate, the better they can manage their finances and the less they fight with financial difficulties and they are more into saving for the future (Klapper et al. 2015). Financial illiterate people might not be able to understand all the additional costs and interests caused by the loan they are willing to take, and instead of saving money, they might take more loans to be able to cover the previous loans (Klapper et al. 2015). People with low financial literacy levels are more easily getting into trouble if they face a situation where, for example, they need to take a loan and it requires calculating the interest rates (Mändmaa 2019). Lusardi and Tufano (2015) mention in their study that financial illiterate people most likely do not plan their retirements by saving money or take a part in the stock market.

As financial literacy levels vary among countries, there are also quite noticeable differences for instance between peoples' age, sex, education and current income level. (Klapper et al. 2015). Klapper et al. (2015) determine, in their study, that the average financial literacy level includes 52 percent of the adults. They also mentioned that Northern European countries have the highest financial literacy. Mändmaa (2019) shows, in the article, that younger people have lower financial literacy and when comparing financial literacy by sex, men are more financially literate than women, in general (Klapper et al. 2015).

Financial literacy has a strong effect on indebtedness. If a person is indebted, it does not automatically mean that person has low financial literacy, but when a person starts to approach over-indebt and, is no longer able to cover all the expenses with incomes available, then it might be a cause of financial illiteracy (Angel & Heitzmann 2015). According to Angel and Heitzmann (2015), the factors causing over-indebtedness can be divided into micro- and country-level factors. Micro-level factors include behavioral aspects as poor budgeting ability, which can lead to weak spending habits, a low-income level compared to the expenses and the unexpected circumstances in life that create a large change in a person's former financial situation (Angel & Heitzmann 2015). Country-level factors have an impact on a person's chance to eventually end up over-indebted. These factors include actions that possible are going to prevent over-indebtedness, for instance, financial education, laws regarding loans and creating plans to pay the loans back (Angel & Heitzmann 2015).

Financial stability can be affected in many different ways. Aaltonen et al. (2015) determine, in their analysis, that change's in a persons' life, for instance having a child, can affect the family's financial welfare. They also find that there is a relationship between the persons' age and the possibility of indebtedness. Lea (2021) suggests that there should be some policy recommendations regarding debt-related issues provided by the government because indebtedness can be problematic not only for human beings but also for the community. Lea (2021) also connects this to the current world situation with the COVID-19 pandemic, which has had an effect on peoples' finances and their work situation, and many people are left unemployed due to the crisis.

Indebtedness can be caused by behavioural factors. Abrantes-Braga et al. (2020) introduce a viewpoint in their article, where risky indebtedness behaviour does not straight have a connection with being indebted. They show a connection between a low financial level and spontaneous buying habits and this confirms that risky indebtedness behaviour is an important feature when becoming eventually indebted. Lusardi and Tufano (2015, 333) introduce the concept of 'debt literacy', which they describe "as the ability to make simple decisions regarding debt, applying basic knowledge about interest compounding to everyday financial choices". They talk about how over 50-years-old persons are not capable of calculating interest rates or do not know the meaning of inflation and how less financial literally persons probably have more expensive mortgages.

1.2. Youth and financial literacy

Young people face difficulties caused by financial illiteracy, especially if they do not have the needed financial knowledge to succeed in their money management decisions (Curto, Lusardi, Mitchell 2010). Sabri (2017) mentioned that has been proposed previously that the possibility to get financial education provides better skills in individuals' finance controlling. Mändmaa (2021) presents that the more experience in the finance field (e.g. using credit card or their saving manners) raise the level of financial literacy among youth. Moreno-Herrero et al. (2018) show in their work that having a bank account leads to more improved financial skills. In Mändmaa's (2021) study, it is shown that young adults are keener on short-term financial plans instead of long-term, which is an important notice to be able to provide them the needed guidance to make more responsible decisions. Mändmaa (2021) and Moreno-Herrero et al. (2018) findings underline that male students succeeded better in financial literacy than females, mostly due to the differences in mathematical performances.

The OECD, started the PISA survey in 2000 and, in 2018 covering 79 countries all over the world. PISA is a survey for 15-year-olds to test their knowledge in the area of main school subjects (e.g. reading, mathematics, science) and other additional fields (e.g. problem solving and creative thinking). In 2018, financial literacy is included and 20 countries participated. The best performance in financial literacy in 2018 is performed in Estonia followed by Finland and Canada (OECD 2020).

OECD (2020) discovers that 94 percent of students identify their parents as the main source regarding financial questions. Moreno-Herrero et al. (2018) conclude that parents can affect positively their childrens' financial literacy by discussing money management with them. They also point out that, unfortunately, not every child has that opportunity to learn financial skills at home and, this is why also financial education should be provided at school. Jorgensen and Savla (2010) show that children from higher-income families are facing a more positive approach against financial knowledge.

1.3. Youth and indebtedness

More young adults are beginning their path in working life with a large amount of debt as they might be finalizing their studies or buy the first apartment. Getting a loan is not always a bad decision, because often the loan is needed to be able to make the large purchase (Houle 2014). One of the main factors of young adults' indebtedness is the rise in the cost of studying, as nowadays it is almost required to have a degree when applying for a job, which increases the number of student loans needed (Houle 2014). In PISA 2018, it is mentioned that, for instance, 30 percentage of students in Chile and 58 percent of Finnish students, at bachelor or master level, have a public student loan (OECD, 2020). Callender et al. (2018) mention that "having a student loan debt is no longer a short-term condition but is becoming the new normal". They also find out that worrying about student loan repayments can have a negative influence on entrepreneurship because the financial risk is being seen as too large.

Aaltonen et al. (2017) discovered that moving out from parental homes increased the possibility of getting debt troubles. When a person turns 18 years old, the possibilities to get customer credit is available and this might lead to bad financial decisions if the person does not think about how the decision will affect his/her future financial position (Aaltonen et al. 2017). Houle (2014) determines in the study that young adults are more likely to have credit cards than mortgages, and this increases the risk of overindebtedness. Carlsson et al. (2016) identify that the various new online credit possibilities that are easily available in mobile phones, can increase youth indebtedness widely even though young people usually are digitally literate.

1.4. Youth financial literacy and indebtedness in Finland

As mentioned earlier, Finland earned second place in the financial literacy PISA assessment (OECD 2020) and therefore, has one of the highest financial literacy rates (63 percent) in the world (Klapper et al. 2015). Nissinen and Rautopuro (2020) mention in their work that success in PISA assessment indicates that the quality of financial education is exclusive in Finland. The education in Finland is stable between every school, and as there are no large variances between the results, it indicates the high education quality (Ustun et al. 2018). However, high financial literacy does not straightly mean that everyone could make responsible financial decisions. There are differences between people, especially young people, people with low income and unemployed persons are the main risk groups (Mikkonen 2018). Mikkonen (2018) also mentions that young adults ending up in the cycle of debt is not always a cause of financial illiteracy but a cause of impatience and social pressure.

Talous ja Nuoret (TAT) is a Finnish organization that helps young people to develop their financial skills through different projects that provide better learning of financial knowledge. (Nissinen & Rautopuro 2020). For example, one of their projects is called “Yrityskylä” and it is made for 6^{th} and 9^{th}-grade students. Yrityskylä environment for 6^{th}-grade students is a small town simulation, where every student has a job, earns money and they also can consume their money; 9^{th}-grade students are working in teams and try to make their company the best among international markets (TAT Yrityskylä).

Oksanen et al. (2021) discover in their study that the increasing popularity of gambling is one risk factor for the younger population indebtedness as gambling advertisements in social media platforms were seen by 31 percent of Finnish participants every week. Majamaa & Rantala (2019) and Oksanen et al. (2016) introduce in their studies that the risk of getting indebted is closely linked to moving out from parental home at a young age, especially in the Nordics. Majamaa & Rantala (2019) also find out that students had fewer debt-related problems than those young adults who were working and getting paid. Oksanen et al. (2016) discuss in their study that young adults with only primary education were more likely facing debt problems and this slightly shows the importance of education.

In conclusion, financial literacy has been a topic of conversation during the past years and it affects widely on all people's financial-related issues. The knowledge of financial literacy is being examined among both, youth and adults, to improve their financial behaviour and be able to make better financial choices. Indebtedness is being seen as a risk for young adults, mainly as they are in a vulnerable position when starting their careers and families. A good financial literacy level could help them in avoiding over-indebtedness.

2 METHODOLOGY AND DATA

In this chapter, the author presents the data and introduces the methodology used in this thesis. Secondary data, collected from OECD-PISA 2018 survey, Kelasto database and Statistics Finland database are used. The dataset is going to be described in the first subchapter followed by the introduction of the methodology. In the second part of this chapter, the analysis will be conducted and the results will be introduced and discussed.

2.1. Data and methodology

The data about indebtedness is collected from Statistics Finland database ’StatFin’. The data is based on Finland’s Tax Administration data, which covers Finland’s population in whole and it is integrated with the collected statistics about income distribution. The data includes the following factors: person’s age, family, gender, form of debt (housing loans, other debts and total debt), disposable money income and region, which are presented in Table 1. This data has been collected since 2002 (Statistics Finland, 2017) and it is chosen because it covers the whole population of Finland. It is reliable as it is produced by the national organization. All financial data are in euros. The data has some limitations because it is conducted from Tax Administration’s information by the people’s social security numbers, so the individual detailed information per person is not available. Some of the datasets also have limited possibilities to choose the variables, for instance, gender is not available for choice in most of the datasets and there is no mention of education or employment. There is also some variation in age groups which are used.

The author will be using the data from 2016 to 2019 among the age groups 16-24 and 24-35, with the additional factors of having children (no children, one child, two children and 3+ children). The debt will be divided into mortgages, other loans which include study loans and other credits, and the total amount of debt. The regional amounts of debt will also be included for comparison.

Another source for indebtedness data will be conducted from the Kelasto database. It is a database, which is being administrated by the Finnish Social Insurance Institution, Kela. The database has data regarding social security issues and because student loans in Finland are guaranteed by Kela, that is the reason they can provide this data. In this thesis, the author will use data of average student loans specified with age groups 16-19 and 20-29 and educational backgrounds such as university degree, university of applied sciences degree, vocational education, upper secondary education, other educational institutions and educational institutions abroad. Regions are also taken into account. These variables are also presented in Table 1. This dataset has also some limitations, as there is no individual information available and it only has the data divided into years, genders and regions. It does not provide any specific information on the student's study subjects, it only refers to the educational institutions.

Variables	Description	Coded
Age	16-24 or 25-34 years old / 16-19 or 20-29 years old	0 if 16-24 , 1 if 25-34 0 if 16-19, 1 if 20-29 Different datasets used which have a different age groups The age groups include young people from 16 years olds, as they have a limited possibility to get study loans if necessary.
Gender	Male or female In the following table the sample sizes are presented, when using gender as a variable	0 if male 1 if female
Number of children	No children, 1 child, 2 children, 3 or more children	0 if No children, 1 if 1 child, 2 if 2 children, 3 if 3 or more children
Education	University, University of Applied Sciences, Vocational education, Upper secondary schools, Other educational institutions, Educational institutions abroad	0=University, 1=University of Applied Sciences, 2=Vocational education, 3=Upper secondary schools, 4=Other educational institutions, 5=Educational institutions abroad

Variables	Description	Coded
Form of debt	Housing loan or other debt, student loans, total debt	
Disposable money income	Includes wages and salaries, entrepreneurial income, property income, current transfers received and current transfers paid	
Region	Helsinki-Uusimaa, Southern Finland, Western Finland, Northern and Eastern Finland	0=Helsinki-Uusimaa, 1= Southern Finland, 2=Western Finland, 3= Northern and Eastern Finland
Financial literacy score	Finland's financial literacy score in PISA 2018. Total mean score is 537, score for girls is 540 and for boys 534.	

Table 1: Variables with description from StatFin database, Kelasto database and OECD's PISA 2018 survey.
Source: Official Statistics of Finland, Indebtedness; Kelasto, Students ; OECD Pisa 2018 Survey.

Data for financial literacy is collected from OECD's provided PISA 2018 assessment. PISA survey has been conducted among 15 years old students and the results are provided on PISA financial literacy scale from 1 to 5, depending on the students' performance. To be able to reach the best result, 5, the score needs to be at least 625 and the weakest is 1 which requires at least 326 points (OECD 2020). The author will be using the mean financial literacy scores for Finland, which has been examined first time in 2018. The score for girls is 540, for boys 534 and the total mean score is 537.

Figure 1 presents the results from PISA 2018 financial literacy assessment in few countries. Chile, Estonia and Finland are representing the OECD countries, and Bulgaria, Indonesia and Russia are the partner countries. Chile is selected into this figure as it had the weakest score among OECD countries and Estonia has been selected to present the difference between Finland and the best-scored country in the assessment. Russia was the best performer among the partner countries, Indonesia the weakest and Bulgaria resulted between these two. As it can be seen, Estonia, Finland and Russia resulted in over the average of all countries. Finland's financial literacy score is 537, which indicates that the performance is on the financial literacy scale in level 3. It means that students know the commonly used financial concepts and can create simple financial plans (OECD 2020). This quite high performance can be explained with high-quality education systems, which take into account diverse learning. Also, in Finland lot of young people have a bank account and card to be responsible for their money usage, which of course teaches them about budgeting and taking care of their finances.

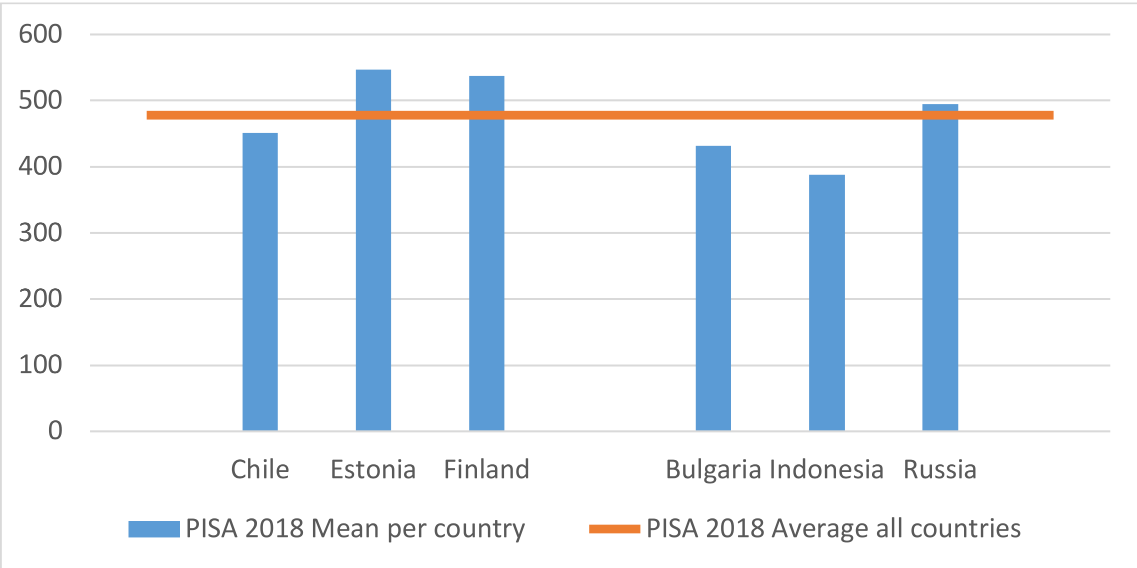

Figure 1: Mean financial literacy scores in PISA 2018 assessment.
Source: OECD (2020, 162), prepared by author

The OLS linear regression model will be used to conduct the analysis and find the relationships between the total debt and the independent variables mentioned in Table 1 to be able to see the possible patterns. The regression analyses are calculated by using the secondary data from Official Statistics Finland regarding indebtedness, Kelasto database about student loans and education and OECD's PISA 2018 financial literacy scores.

The methodology used to conduct this thesis is OLS regression analysis. The equation will be formatted by dependent variable and multiple independent variables. The following equation is used in this thesis to determine the effects of independent variables towards dependent variable, total debt, will be following:

$$y_i = \alpha_i + \beta_1 X_i + B_2 X_a + \cdots + B_a X_a + \varepsilon_i$$

where

y_i= dependent variable

α =variable specifier

β = coefficient

X = independent variable

ε = error term

2.2. Analysis and results

The effect of financial literacy in preventing indebtedness and the reasons for youth indebtedness was studied by using linear regression (OLS). In the following regression analysis, statistically significant levels are p<0.01, p<0.05 and p<0.1, and the equation used is introduced in the previous subchapter.

The relationship of the dependent variable, the ratio of total debt to disposable income, and independent variables age, children, average disposable income, regions, study loans and education are introduced in Table 2. The number of observations in this regression is 288 in 2016 and 384 in 2019 with 6 independent variables.

2016			**2019**		
Variables	Coefficient	p-value	Variables	Coefficient	p-value
Age group (16-24=0)	-0.074	0.157	Age group (16-24=0)	-0.173	0.000***
Number of children (No children= 0)			*Number of children (No children= 0)*		
1 child	0.084	0.002***	1 child	0.100	0.000***

2 children	0.096	2.969E-05***	2 children	0.105	1.463E-06***
3 or more children	0.061	0.001***	3 or more children	0.069	3.948E-05***
Region (Helsinki-Uusimaa as reference)			*Region (Helsinki-Uusimaa as reference)*		
Southern Finland	0.083	0.000***	Southern Finland	0.077	0.000***
Western Finland	0.024	0.026**	Western Finland	0.023	0.016**
Northern and Eastern Finland	0.018	0.010***	Northern and Eastern Finland	0.017	0.006***
Average disposable income	-2.79E-05	6.248E-18***	Average disposable income	-2.166E-05	1.446E-14***
Study loans	4.234E-06	0.353	Study loans	1.254E-06	0.675
Education (Universities as reference)			*Education (Universities as reference)*		
Universities of applied sciences	0.004	0.876	Universities of applied sciences	0.002	0.929
Vocational education	0.006	0.665	Vocational education	0.002	0.848
Upper secondary school	0.006	0.561	Upper secondary school	0.002	0.799
Other educational institutions	0.003	0.668	Other educational institutions	0.001	0.849
Institutions abroad	-0.006	0.466	Institutions abroad	-0.002	0.775

Table 2: Results from regression analysis between the ratio of total debt to the disposable income and age, number of children, region, average disposable income, study loans and education.

*** = p<0.01, ** = p<0.05, * = p<0.1

Source: Author’s own calculations based on Appendix 1.

It can be concluded that the independent variable ‘Age group’ is statistically significant in the year 2019 and has a really weak negative influence on the ratio of total debt to disposable income. This means that as the person gets older, it causes a tiny decrease in the ratio of total debt and disposable income. This can be explained by the fact that people’s income usually increases when they get older and if the amount of debt stays within the same amount, the ratio decreases. In this case, the result indicates that when moving from the younger age group 16-24 to older 25-34, the amount of debt decreases by -0.173 times.

The variable of having children resulted statistically significant in every categorical variable (No children, 1 child, 2 children or 3+ children) in both years, and a clear pattern can be seen. Having children has a positive relationship towards the ratio of total debt to disposable income and it causes an increase in it, regardless of the number of children. In 2016, having two children has a slightly higher coefficient (0.096) than having one child (0.084) or three or more children (0.061). In 2019, the second child seems to cause the largest increase in the ratio of debt to disposable income (0.105) and when looking at the coefficient of having 3 or more children, it is lower than the other variables (0.069). It can be that people having children are more likely preparing themselves for the future and the next children when having a first child. That is why they might already take a loan for a larger house or car so that if they will have more children later, they do not need to, for instance, move again.

The categorical variables in ‘Region’ are statistically significant. Helsinki-Uusimaa has been selected as the reference variable. When comparing the coefficients from 2016 and 2019, it can be seen that in both years there are similarities with the variables. Southern Finland has the highest coefficient (0.083 in 2016 and 0.077 in 2019) and therefore there is a positive, but weak relationship with the ratio when living in this area. It means that the ratio of total debt to disposable income increases. This can be explained by the fact that housing prices, rents and overall living costs are higher in Southern Finland, as the capital locates there and that is the area where most of the people in Finland are living. There is a small difference in coefficients between Western Finland and Northern and Eastern Finland, and the results show that living in Western Finland causes a bit higher increase in the ratio of total debt to disposable income than when living in Northern and Eastern Finland.

Average disposable income has very small negative coefficients in both years, which indicates that if the amount of average disposable income increases, it causes a decrease in the ratio of total debt to disposable income. Education variables in this regression did not provide statistically significant results and therefore these variables cannot be taken into account in this analysis.

2016			**2019**		
Variables	**Coefficient**	**p-value**	**Variables**	**Coefficient**	**p-value**
Age (16-19 = 0)	0.279	0.003***	Age (16-19 = 0)	0.730	0.002***
Gender (Male = 0)	0.000	0.000***	Gender (Male = 0)	0.000	0.000***
Housing loans	1.000	0.000***	Housing loans	0.999	0.000***
Other debts	0.999	0.000***	Other debts	1.000	0.000***
Student loans	-0.722	0.040**	Student loans	5.769	0.548
Education (Universities as reference)			*Education (Universities as reference)*		
Universities of Applied Sciences	0.031	0.698	Universities of Applied Sciences	-0.001	0.999
Vocational education	0.015	0.698	Vocational education	-0.000	0.999
Upper secondary education	0.010	0.698	Upper secondary education	-0.000	0.999
Other educational institutions	0.008	0.698	Other educational institutions	-0.000	0.999
Educational institutions abroad	0.006	0.698	Educational institutions abroad	-0.000	0.999
Region (Helsinki-Uusimaa as reference)			*Region (Helsinki-Uusimaa as reference)*		
Southern Finland	0.160	0.077*	Southern Finland	-3.800	0.119
Western Finland	-0.035	0.048**	Western Finland	0.631	0.634
Northern and Eastern Finland	-0.070	0.023**	Northern and Eastern Finland	-1.062	0.064*

Financial literacy score, Finland	-0.007	0.06*	Financial literacy score, Finland	-0.959	0.002***
Gross income	3.723E-06	1.373E-06***	Gross income	-1.043E-05	0.588

Table 3: Results from regression analysis of total debt and age, gender, housing loans, other debts, student loans, education, regions, financial literacy scores and gross income.
*** = p<0.01, ** = p<0.05, * = p<0.1
Source: Author's own calculations based on Appendix 1.

Table 3 presents the relationship between the total debt, age, gender, amount of housing loans, other debts and student loans, education, region, financial literacy score and gross income. There are 168 observations in 2016 and 192 observations in 2019 with 9 independent variables. Total debt is used as a dependent variable and the other variables are used as an independent. Results show that in 2016 'Age' coefficient is closer to zero, which means that there is no relationship towards total debt in that year. On the other hand, in 2019 the coefficient 0.730 of variable 'Age' shows a strong relationship and therefore it indicates that age affects positively the total debt. This means that aging causes an increase in the average total debt of an individual. This result is understandable, as most likely people are making larger investments when they are older and these require more resources, and because of that people take more loans.

Gender appears in both cases with a coefficient of 0, which indicates that being male or female does not have any noticeable effect on total debt. The gross income coefficient in 2016 has a very small value and it can be concluded that if gross income changes, it does not influence total debt. Housing loans and other debts have both relatively strong relationship (1.000) towards total debt, which means that changes in either of these two variables strongly influence the amount of total debt by increasing or decreasing it. Study loans in 2016 show also a strong influence on total debt, with a coefficient of -0.722. It determines that an increase in study loans leads to a lower amount of total debt. This might be because study loans in Finland have low interest rates and they are guaranteed by the government of Finland, so many people are willing to take the loan even though they would not possibly need it and put it on their savings or investment accounts. This might make the need for other credits and loans lower and by that cause a decrease in total debt. Also, taking a loan for studies can be a great investment for the future and higher education can provide better job opportunities and higher salaries in the future.

None of the education variables resulted statistically significant. However, these should be further studied as most likely higher education can affect people's financial knowledge positively. The level and the subject of the studies can influence financial literacy and by that, the level of indebtedness can be lower. There might be also a difference in total debt if the person is studying in Finland or abroad. People who are studying abroad might have to pay tuition fees and they are funding the studies with study loans. Being a student abroad also provides an opportunity for a higher monthly amount of study loan, which enables people to pay higher tuition fees and other living costs. This, obviously, can have an effect on the amount of debt to be higher among Finnish students studying abroad than among students who are studying, for instance, in Finland for free.

Living in Western Finland and Northern and Eastern Finland have no significant influence on total debt regarding the results of 2016. In 2019 the Northern and Eastern Finland show a strong, negative relationship with total debt. This determines that living in this part of Finland lowers the amount of total debt, which is most likely understandable as the living costs are lower than in the Helsinki-Uusimaa area and therefore the need for loans is lower. Southern Finland resulted with a coefficient of 0.160 in 2016, and this interprets that there is a really weak positive relationship and living in Southern Finland causes a tiny increase in total debt.

There is a weak relationship between financial literacy and the total debt in 2016. The coefficient is -0.007, which indicates that if the financial literacy score becomes better, it can cause a tiny decrease in the total debt. However, this is not a strong influence. In 2019 the relationship between these variables is clear and strong, as the coefficient is -0.959 and close to -1. This result determines that an increase in financial literacy score causes -0.959 times to decrease in the total debt. The result is logical as the higher financial literacy score tells that people are more familiar with handling their finances and have more knowledge in finance-related concepts and procedures. As the relationship between financial literacy and the total debt in 2019 is stronger than in 2016, it can be concluded that financial literacy has an important role in youth indebtedness today. With this, research question 1 can be answered that the changes in financial literacy affect towards youth indebtedness. The higher the financial literacy level is, the more likely the indebtedness is lower as people are more aware and make more responsible financial decisions.

Year	Gender	Total debt	Financial literacy level
2018	Male	61,477,047	534
2018	Female	59,465,159	540

Table 4: Total debt and financial literacy levels for male and female 0-19 years old from Finland. Source: Appendix 1 and OECD (2020)

Correlation	Total debt	Financial literacy level
Total debt	1	
Financial literacy level	-1	1

Table 5: Correlation between Total debt and Finland's Financial literacy score 2018.
Source: Data from Table 4.

Table 4 shows the data regarding Finland, which includes the total debt among 0-19 age group males and females in 2018 and it also provides the information based on the results from OECD's PISA 2018 financial literacy survey answered by 15-years-old Finnish students. The following Table 5 presents the correlation, -1, between total debt and financial literacy level in Finland. It results that financial literacy has a strong negative correlation among total debt and changes in financial literacy affect strongly to the amount of total debt. This indicates that when the financial literacy level increases, the average total debt decreases. From the results, it could be concluded that by raising the financial literacy level, indebtedness can be reduced. When people have more information regarding how to manage their finances, they make more responsible and better decisions as handling their finance.

CONCLUSION

The importance of financial literacy has been noted lately and its effects on people's financial behaviour have been studied. For young people, financial literacy might be a familiar concept or not. It depends on the input of the parents and whether they are teaching financial skills to their children and also school's attitude towards the topic has a meaningful effect. Over-indebtedness is a cause of weak personal financial management and it is a critical issue, which could be avoided by providing enough possibilities to learn financial skills in different ways.

According to this thesis, there are multiple reasons why young people are getting indebted. The results from this thesis show that young peoples' amount of loans in Finland are increasing when they are aging. Naturally, people getting older means that they are experiencing significant changes in their lives, as studying, buying a house or having children, which will increase the need for money and through that also the number of loans. This might not be a bad sign, as when the money is used to build a better future, being indebted is understandable. It becomes problematic if the loans are taken without consideration and making sure with calculations that is the person able to pay them back.

Having children has a great impact on the amount of total debt. As can be expected, every child causes an increase in the need for money and therefore people are easily taking loans for housing or some consumer credit to fill the missing amount. By increasing the financial knowledge of youth, they would be more prepared for the life changes that have affect their financial situation. Then they might be able to plan their budgets and follow their money usage more clearly, to avoid the situation of not having enough money, for example for rent or food.

The results of this thesis show that one of the factors for youth indebtedness is study loans. Young people are most likely to study for quite many years in universities, vocational schools or other educational institutions in Finland or abroad. This often causes increasing living costs when moving away from the parental house to the studying town and being responsible for their own life. Even though students in Finland are getting study support and housing benefit from the government, it might be that the amount is not enough to cover the expenses like rent, food, electricity and water. This is the situation where most people decide to get a study loan to cover the missing amount of money. Of course, some of the youth decide to work along with the studies, but it might still not be enough and they want to take the loan to be able to graduate in time. Study loans are most likely taken for a specific reason, to support the study years financially, which is a good reason to take the loan. Therefore, study loans might be the main factor influencing the total debt of young adults, but it is not the factor that leads youth to over-indebtedness. Study loans can be seen as a factor that increases the amount of total debt for a moment in a youth's specific life situation. Study loans are usually an investment for the future and are not a bad decision if the money is wisely used.

To answer the research question, how do the changes in youth financial literacy affect their indebtedness in Finland, the results show that the higher the score of financial literacy is, the larger is its decreasing effect on total debt. It would be important that young people are aware of the consequences and responsibilities that come with financial products, to avoid young people's over-indebtedness. It can be noted that total debt is having a strong negative correlation with financial literacy. It would be essential to increase young people's financial literacy to be able to avoid the need for unnecessary loans. People should be taught more about ways of saving money for a rainy day than taking loans without thinking more about the causes. Of course, at some point in life taking a loan is unavoidable as not many people in the world can buy a house without a housing loan or buy a car without a car loan. Therefore, it is not the case to teach youth to never take a loan, but teach them to use the opportunity wisely.

To conclude, financial literacy plays a meaningful role in youth's life when they are handling their finances. It is important to understand that there is a possibility to get over-indebted among life changes, which seems to be the most effective factor towards youth indebtedness. Young adults should be provided the skills for planning budgets and avoid purchases that they are not able to cover financially. Also, it is important to them to be able to adjust their budgets to different life situations. These are the things that should be learned already a lot before it is possible to take loans at 18 years old. It is important to learn money-related things from early childhood with different interactive games or plays and then later on it is easier to provide more detailed information of the topics when people are growing up as they already have the needed base information of financial literacy. As can be noticed from the results, the relationship between financial literacy and total debt is really strong, which highlights that financial literacy is an important factor in youth indebtedness.

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APPENDICES

Appendix 1. Datasets

Data files used in this thesis can be found in the following Dropbox file:

https://www.dropbox.com/s/oyze4sjtf7wscj9/Data%20for%20bachelor%20thesis-%20Eveliina%20Koski.pdf?dl=0

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