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YOUTH UNEMPLOYMENT AND SOCIAL EXCLUSION

Focus on the Nordic Countries

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ABSTRACT

Tutkimuksen lähtökohtana on selvittää, missä määrin nuorisotyöttömyys Pohjoismaissa on riippuvainen taloussykleistä sekä miten erilaiset työvoimapoliittiset keinot pystyvät heikentämään työttömyyden negatiivisia vaikutuksia. Lisäksi tutkimuksen lähtökohtana on selvittää miten työttömyys vaikuttaa yksilön hyvinvointiin, ja erityisesti millainen vaikutus työttömyydellä on mielenterveyteen. Tutkimuksessa keskitytään erityisesti vaikutuksiin 15–29-vuotiailla nuorilla. Tärkeimpiä tutkimuksen käyttämiä käsitteitä ovat NEET-aste sekä Okunin laki. NEET-aste kertoo maassa olevien 15–29-vuotiaiden henkilöiden, jotka ovat koulutuksen, työn sekä harjoittelujen ulkopuolella, prosenttiosuuden koko ikäluokasta. Okunin laki selittää, miten työttömyysaste muuttuu, kun bruttokansantuotteen kasvuaste muuttuu. Teoriaosa selvittää aikaisempien tutkimusten valossa, miten työttömyys vaikuttaa hyvinvointiin sekä mitkä ovat keskeisimpiä riskitekijöitä työttömyydelle, syrjäytymiselle ja köyhyydelle. Lisäksi teoriaosa vertaa keskenään Pohjoismaiden työmarkkinoita ja työvoimapolitiikkaa.

Tutkimusongelmia on tutkielmassa kaksi. Ensimmäinen näistä tutkii, miten Suomen sekä Tanskan NEET-asteet reagoivat bruttokansantuotteen muutoksiin. Tutkimuksen ensimmäinen osa seuraa Okunin mallin viitekehystä, ja NEET-aste korvaa työttömyysasteen paikan mallin selitettävänä muuttujana. Tutkimusongelmista toinen tutkii, miten taloussuhdanteet vaikuttavat masennuslääkkeiden myyntiin Pohjoismaissa. Tutkimuksessa on hyödynnetty pienimmän neliösumman menetelmää ja muuttujien data on kerätty Taloudellisen yhteistyön ja kehityksen järjestön tietokannasta sekä Nowbase-tietokannasta.

Tutkimustulokset ovat linjassa aikaisempien aiheesta tehtyjen tutkimusten kanssa. Ensimmäisessä mallissa NEET-asteen havaittiin laskevan, kun bruttokansantuotteen kasvu kiihtyy. Vastaavasti tutkimuksen toinen malli havaitsi, että masennuslääkkeiden myynti kasvaa, kun työttömyysaste kasvaa ja vastaavasti, kun bruttokansantuotteen kasvuaste hiipuu. Tutkimuksen ensimmäinen malli käytti hyväkseen kooltaan pieniä aineistoja, mikä pitäisi huomioida tutkimustulosten hyödynnettävyydessä.

KEYWORDS: youth unemployment, unemployment rate, social exclusion, Nordic labour market models, Okun's law

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1 INTRODUCTION

1.1 Purpose of the study and research questions

The purpose of this study is to analyse youth unemployment and policies to inhibit social exclusion. In addition, the study describes the development of youth unemployment in the Nordic countries and does analysis of its development in economic cycles. It is well known that the employment of young people is procyclical so the access to first employment after finishing education is more difficult in recessions. Analysis thus compares the evolution of youth unemployment between Nordic countries across economic cycles. The other of the two research questions in the empirical part examines how the NEET rate (young people Not in Employment, Education or Training) changes in Finland and Denmark when the General domestic product (GDP) changes. The study uses the framework used in Okun's law, and the NEET rate replaces the unemployment rate as the variable being explained.

Another theme of the thesis is to study how unemployment affects wellbeing, and especially its effect on mental health. The chosen measurement in the study's empirical part to represent mental health is, how many people suffer from depression. The most common treatment for depression is antidepressant medication (Vilhelmsson, 2013). Thus, the empirical part studies how changes in unemployment and GDP affect the changes in the sales of antidepressants.

The research questions of the thesis are:

To what extent youth unemployment is procyclical in the Nordic countries, and in addition, evaluate the policies to mitigate its adverse effect.

How unemployment affects wellbeing with emphasis on mental health, and in addition, how the sales of antidepressant drugs follow the economic cycles.

The empirical part of the thesis consists of two simple regression models. The first model examines how the NEET rate can be explained with changes in the GDP as well as changes in the sales of antidepressant drugs. The second model examines how the sales of antidepressants can be explained with changes in unemployment, GDP and the number of people receiving social assistance benefits. The first model uses data from Finland and Denmark and the second model uses data from the Nordic countries. The first model follows closely the framework provided in Okun's law, with NEET rate replacing unemployment rate in the model.

Next, some terms that are important in the thesis are explained in more detail, especially, the NEET rate – what it is and why it is replacing youth unemployment rate as the explained variable in the empirical part. In addition, the following text introduces the study's themes and provides reasons of why the study's themes are of importance.

A person is considered unemployed when he or she is not working and is actively searching for new jobs and ready to work. In principle, students and the old who have left the labour market (voluntarily not working) are not considered as unemployed. (Burda& Wyplosz, 2009, p. 117.) Another broader term used in the analysis is NEET (Not in Education, Employment, or Training) that describes a young person of 15-29 years of age who is not in employment, education or training (in addition, age group 15-24 has been used as a reference). Hence, the requirement of actively looking for new jobs is released since the NEET rate includes the inactive as well. The NEET rate of a country is

calculated by measuring how large part the NEETs are of the total age group, instead of those in the labour force. In some countries, men and women who are serving in military (or doing a civilian service) are not included in the NEET figures. Apart from these people, the NEET rate includes every person of that age group. Across Europe, in OECD countries (The Organization for Economic Cooperation and Development) the NEET rates vary greatly – the smallest NEET rate is six per cent in Iceland and the highest 26 per cent in Turkey. In general, the highest NEET rates in Europe are found in Southern European countries and the lowest in central and northern European countries. (OECD, 2019.)

The NEET rate provides insight into how well the young in different countries manage the transition between school and work (Logez, 2020). NEET rate can serve this purpose better than youth unemployment rates since the unemployment rates do not consider the country differences in the size of the labour force. NEET rates are often lower in those countries where the average graduation ages are higher. (OECD, 2019; Ekonomifakta, 2020; Logez, 2020). Moreover, NEET rates often mirror the economic cycles and demographic changes of a country. Usually, NEET rates are higher when the economy suffers from a depression and when the proportion of young people in the country is large. (Logez, 2020.) The age group where the NEET rate is the highest is in many OECD-countries the 25-29-year-olds, and the age group with the lowest NEET rates are those young people under 20 years. OECD (2019) states that among 25-29-year-olds, the size of the NEET rate is almost three times the NEET rate of 15-19-year-olds. However, the older NEETs have more qualifications and work experience than the teenage NEETs and tend to remain in the NEET category for shorter time periods. When all OECD countries are included, NEETs are less likely to be male than female. OECD (2019) reports the differences between the NEET rates of men and women as follows:

> *The OECD average NEET rate for young women is almost 4 percentage points higher than the rate for young men. Only in Canada, Denmark, Portugal and Switzerland are young men more likely to be NEET than young women, and even then differences are only small. Gender gaps in NEET rates are largest in Mexico and Turkey, where female NEET rates are around 25 percentage points higher than male NEET rates*. (OECD, 2019.)

Logez (2013) explains these differences by the differing social expectations that in some countries exist for men and women. Young women may be encouraged to starting and caring for a family rather than seeking education or employment. (Logez, 2013.) More so, if a man has a child, it does not on average have any effect on his likelihood to be a NEET, whereas nearly half of all young mothers are NEETs. (OECD, 2018, p. 38.)

Roberts (2009) argues that the failed transitions from school to work are not affected to a larger degree by the youth's lack of ambition or talent, but rather are affected primarily by the opportunity structures, which consist of the interrelationships between family backgrounds, education, labour market processes and employers' recruitment practices. It cannot be assumed that the youth with NEET status do not want to work or study (Hoikkala & Vauhkonen, 2020). The NEETs experience more distress, and their life quality is in several ways poorer than the average person's (Finnish Youth Research Society, 2017; Hoikkala & Vauhkonen, 2020). In addition to their personal unhappiness, NEETs possess costs for the society as well. Unpaid salaries decrease tax revenues and increased transfer payments increase public expenses. In addition, employment services and the potentially increased use of social and health services belong to the costs for the societies that the NEET youth cause. (Hoikkala & Vauhkonen, 2020, pp. 7, 39.)

Since the individual consequences as well as the costs for societies are significant, it is important to prevent young people becoming NEETs and help them integrate back into education, employment, or training. Some policy measures that Logez (2013) suggests that could be of help in reducing the number of NEETs include increasing education participation rates, ensuring educational systems to be relevant in terms of the needs

of the labour market and offering recognized vocational qualifications and work-experience programs. (Logez, 2013.) Germany can be given as an example of a country where the youth unemployment is lower than in other countries. Its success is often given the explanation of short-term working subsidises and its dual vocational training which combines vocational training with apprenticeships in companies. (Bell & Blanchflower, 2011.) In Finland, some policy measures which aim to lower the NEET rate are outreach youth work and workshop coaching (Hoikkala & Vauhkonen, 2020, p. 120).

One of this study's themes is to test whether a link between unemployment and health issues exists, and in the theory part of the thesis several previous studies are introduced that in fact have proven correlation between the two. The unemployed have more health issues than the employed, and studies of health selection have reported that those persons with weaker health are more likely to experience unemployment. In a 22-year follow-up study of Bremberg and Lager (2009), they state an association to exist between the changes in the proportion of unemployed 15-24-year-olds and the changes in proportion of 15-year-olds with mental health problems. Countries included in their study were among others Denmark, Finland, Norway and Sweden. The results of Bremberg and Lager (2009) stated a significant link to exist between the unemployment rates of young people and their mental health:

> *"The correlation between the national secular changes in the proportion of young people not in the labour force and the national secular changes in proportion of young people with mental health symptoms was 0.77 for boys and 0.92 for girls."*

Bremberg and Lager (2009) further suggest that changes in the national labour market situations may bear a contribution to the trends of mental health problem development in young people.

Unemployment, especially at a young age, bears potential mental health costs both at the time when the unemployment occurs as well as directly after it and even decades after the unemployment period. In a cohort study of Hammarström, Nilsson, Nordlund and Strandh (2015), they compared the effect of unemployment (unemployment exposure when aged 18-21) and youth program participation in Sweden in terms of mental health symptoms at age 21 and 43. Their results reported a strong and significant link between youth unemployment and internal mental health symptoms at age 21 as well as at age 43. However, no significant relationship was found between mental health problems and participation in youth programs. This suggests that an active labour market policy that provides alternative activities to the unemployed youth could reduce the short- and long-term costs of unemployment. (Hammarstöm, Nilsson, Nordlund & Strandh, 2015.) Utzet & Vancea (2016) reported similar results from the training programmes' positive effects on preventing mental health problems among the unemployed youth.

Next follows the structure of the thesis.

1.2 Structure of the thesis

The thesis is divided into six major chapters. The first chapter outlines the subjects of the thesis and offers arguments on why the topic is relevant and of value. After introduction, the theory part of the thesis follows. It contains chapters 2 and 3 and presents previous studies in the subjects of unemployment, social exclusion and Nordic labour market models. The second chapter is divided into seven subchapters. The first subchapter focuses on unemployment and long-term unemployment, the second subchapter on unemployment's effect on welfare and the remaining five subchapters study the risk factors of unemployment and social exclusion. The third chapter

introduces characteristics of Nordic labour market models. Chapter 3 starts with a brief introduction of the European welfare systems and where the Nordic countries would place themselves in these systems as well as offers arguments why it is reasonable to compare the labour markets of the Nordics. This is then followed by five subchapters which each introduce some main characteristics and developments of a particular Nordic country as well as characteristics that put it apart from the other Nordic countries in regard of the thesis's themes.

After the theory section, the empirical part of the thesis follows. The empirical part starts with chapter 4 presenting the data and methodology used. In addition, chapter 4 presents previous studies that have investigated either Okun's law or the connection between unemployment and the sales of antidepressant drugs. After that, in chapter 5 the results from the conducted regression models are discussed. The final chapter draws conclusions, consisting of general research summary, practical implications of the study, the study's limitations as well as suggestions for future research regarding the topic.

2 FACTORS CONTRIBUTING TO UNEMPLOYMENT AND SOCIAL EXCLUSION AND THE EFFECTS ON WELFARE

This chapter consist of seven parts. First, measurement information and definition of unemployment and long-term unemployment are provided as well as a brief overview of the causes of unemployment and unemployment figures from the Nordic countries and European Union. After that, unemployment's effects on welfare are discussed. Since unemployment is a risk factor for social exclusion, its definition, quantity, and causes are covered in the second part as well. Lastly, parts 2.3- 2.7 in the thesis discuss how certain factors, for example education level and young age, influence the person's risk of unemployment, poverty, and social exclusion.

2.1 Unemployment and long-term unemployment

The country's working-age population is currently often assumed to consist of all those people being 15-74 years of age and living in the country permanently (Pohjola, 2012, p. 168). In some countries, the working-age population is defined to include those people of age 15 to 64 (Federal Reserve Bank of St. Louis, 2020). Not all those people enter the labour force because of a sickness, completing studies, or retirement, among other reasons. The labour force equals thus the working population and the unemployed. A person is considered employed, if the person is working at the reference period or is not working because of a temporary reason such as a year leave or a parent leave, whereas a person is considered unemployed if he or she has actively searched employment during the last four weeks and is able to start working in the next two weeks. The unemployment rate is calculated by measuring which percentage the unemployed make

of the total workforce (all employed and unemployed aged 15-74). (Pohjola, 2012, pp. 168-169.)

In the unemployment issue there are some internationally common features such as sensitiveness to economic cycles. Weakening of the general global economic situation increases youth unemployment in all countries. (Pohjola 2012, p. 170; Gärtner, 2016, p. 439; Statistics Finland, 2016b.) The financial crisis and the European debt crisis of the 2000s are examples of world events that decreased production volumes and increased unemployment in all western industrial countries. Alternatively, it can be noted that the effects of the debt crisis have been uneven to different countries' labour markets inside the European Union. For example, in Greece and in Spain the unemployment rates increased to high numbers in a short time, whereas in Germany the trend was that unemployment decreased in the years following the crisis. Another common phenomenon in different countries is that once unemployment has reached high numbers it often takes a long time to recover. For instance, in the beginning of the 1990s Finland experienced a rapid and quick rise in its unemployment figures and after that the employment has not returned its 1980s level. (Statistics Finland, 2016b.)

Structural unemployment is considered as one of the reasons why it takes long periods for the employment to recover after recessions (Statistics Finland, 2016b). The term structural unemployment came more known in the 1990s when the unemployment rate was high and the unemployment periods longer than before. Structural unemployment can be understood as a situation where the unemployment is not decreasing despite of a labour shortage. Researchers do not agree on the quantity of structural unemployment or how its amount could be decreased. The other form of unemployment is cyclical unemployment, which signifies unemployment caused by the fluctuations in the GDP. There are several causes that contribute to the existence of structural unemployment. One is that the requirements of the working life have increased, thus the professional abilities of the unemployed are not enough for the

opening jobs. (Statistics Finland, 2016c.) A person who cannot answer those increased workplace requirements of education and productivity is in danger of becoming excluded from the labour market (Finnish institute for health and welfare (THL), 2018). Other reasons that have been presented in terms of the existence of structural unemployment include taxing systems, redistribution of income and unemployment benefits. In personal cases it is discovered that the amount of the transfer payments can affect whether the unemployed person decides to accept employment. Accepting work might sometimes be less financially profitable than receiving benefits. (Burda& Wyplosz, 2009, p. 127; Pohjola, 2012, pp. 175-176; Statistics Finland 2016c.)

The following figure illustrates the unemployment rate from 2013 to 2019 in the Nordic countries as well as the average unemployment of 28 countries belonging to the European Union (EU28). In 2013 all the Nordic countries had unemployment rates below the EU28 average. The lowest unemployment rates over the reference period, between 3,1 and 5,8 per cent, were found in Iceland and Norway, and Denmark had its unemployment rate between 5 and 7,4 per cent. In recent years since 2015, Finland and Sweden have had the highest unemployment rates of the Nordic countries, reaching the highest figure of 7,4 per cent in Sweden and 9,4 per cent in Finland in 2015.

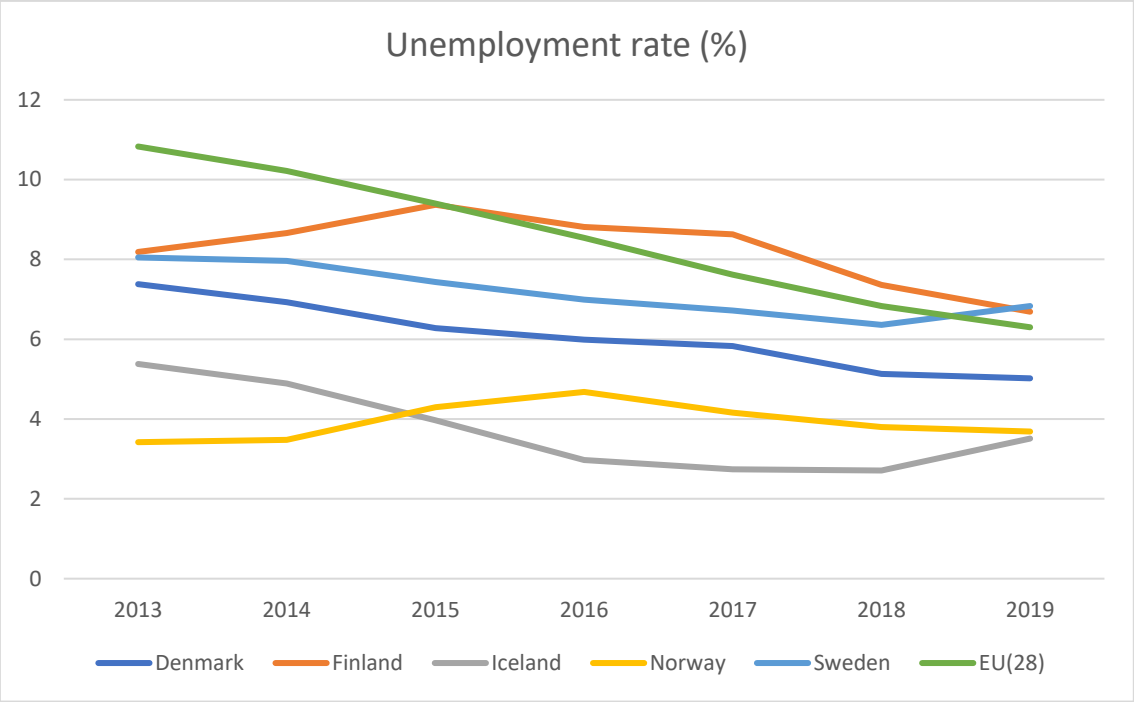

Figure 1. Unemployment rate in the Nordic countries and EU28 in 2013-2019, %. (OECD, 2020a)

When comparing the youth unemployment rates of different countries, it should be taken into consideration that the size of the labour force of those people aged 15-24 can vary significantly across borders. In countries where most of the youth are full-time students and not searching for work, only a small part of this age group is counted to the labour force. In two different countries with approximately the same amount of people aged 15-24 and the same amount of unemployed people in this age group, but different amount of youth belonging to the labour force, the country that has the smaller workforce will show a higher unemployment rate. (Ekonomifakta, 2020.) This is a fundamental issue when comparing the Nordic countries. In Denmark and Norway, the labour force of the young people increases in size when large cohorts of youth undergo training (either as a part of their education or independent from education) and they are registered as employees. On the contrary, in Sweden and Finland the majority of the trainees are enrolled in an education program and are registered as students. The differing registration of employees causes the differences in youth unemployment rates

of the Nordic countries appear larger than they would be with similar employee registration. (Olafsson & Wadensjö, 2012, p. 9.)

Long-term unemployment is defined by OECD (2020b) as follows:

> *"Long-term unemployment refers to people who have been unemployed for 12 months or more. The long-term unemployment rate shows the proportion of these long-term unemployed among all unemployed."*

The following figure illustrates the amount of long-term unemployment in the Nordic countries and the EU28 average from 2013 to 2019. During the reference period, long-term unemployment was considerably higher in EU28 than in the Nordic countries. In EU28, 40- 50 per cent of the people without work had been unemployed more than a year. In the Nordic countries, the highest long-term unemployment rate was first from 2013 to 2015 in Denmark and then since 2016 in Norway. Since 2014, Iceland has had the lowest long-term unemployment rate of the Nordic countries. More so, during the reference period the long-term unemployment rate of Iceland was reduced from over 20 per cent to under 10 per cent.

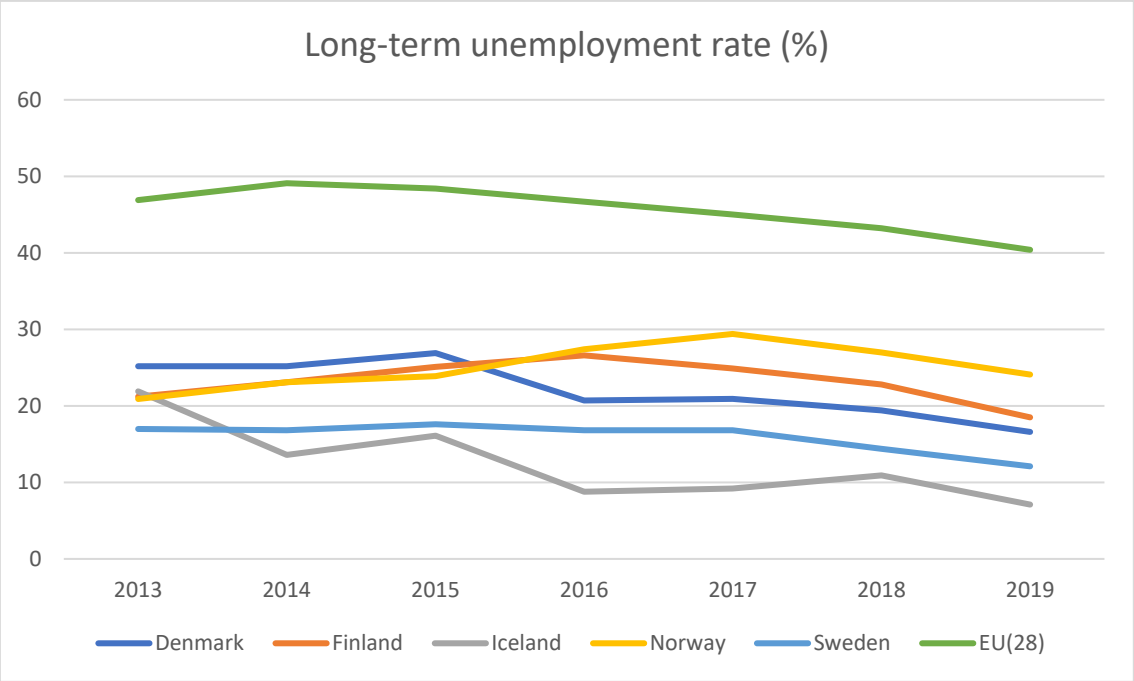

Figure 2. Long-term unemployment rate in the Nordic countries and EU28 in 2013-2019, %. (OECD, 2020b)

2.2 Unemployment and social exclusion

Eurostat (2019) states that the key to fight social exclusion and poverty is to identify the groups that are at a high risk and to determine the reasons to why the risk of social exclusion and poverty is higher for these groups. A Eurostat study from 2019 found high risk of poverty and social exclusion to be more common among women, children, young people, people with disabilities, the unemployed, single-parent households and those living alone, people with lower educational attainment, people born in a different country than the one they reside in, people out of work, and, in a majority of Member States, those living in rural areas.

Unemployment is among the list of causes for a weakened quality of life and greater risk for poverty, but it correlates with of the other causes of social exclusion as well.

Unemployment causes the person suffering and a weakened quality of life, lowers income and makes it difficult for the person to maintain the working abilities and professional skills (Moser & Paul, 2009; Bell & Blanchflower, 2011; Olafsson & Wadensjö, 2012; Pohjola, 2012, p.169; Björklund, Häggström, Nyström and Söderlund, 2015; Eurostat, 2019.) In addition, it weakens the public sector budget balance when there are less tax revenues and more unemployment- and other benefits in the society to pay (Pohjola, 2012, p. 169; Hoikkala & Vauhkonen, 2020, p. 7, 39). Unemployment increases inequality as well, since not all groups encounter the same risk of becoming unemployed – especially the uneducated, the young and the elderly are more vulnerable to experience unemployment (Burda& Wyplosz, 2009, p. 116; Bell& Blanchflower, 2011; Pohjola, 2012, p. 169; OECD, 2020c; OECD, 2020d; OECD, 2020j).

Particularly long-term unemployment can be extremely harmful for the individual and it diminishes the likelihood of finding employment when qualifications and skills may be lost or weakened over time. After a long period outside of work, the unemployed person might give up the hope of finding employment. This negative way of thinking can in turn cause the unemployed person to limit or stop his or her search for work. In addition, long-term unemployment causes significant mental stress and material deprivation not only those affected but their close family members as well. High levels of long-term unemployment in a country indicate that the labour markets are not operating efficiently, which is why it is of a particular concern for policy makers as well. (Carlsen, Ellingsen, Hytti, Kalstø, Nielsen, Sundell, Thorlacius & Wallero, 2011, p. 19; THL& Me-säätiö 2018, OECD, 2020b.)

In a meta-analysis of 324 different studies examining the effect of unemployment on mental health, Moser and Paul (2009) discovered that unemployment was linked with several mental health symptoms such as anxiety, depression and psychosomatic symptoms. Their analysis revealed that on average, among the unemployed 34 per cent had had psychological problems, which was more than twice the amount of these

problems among the working (16 per cent). (Moser & Paul, 2009.) Utzet & Vancea (2016) conducted a similar study with results similar to Moser & Paul's (2009). Utzet & Vancea (2016) identified 46 academic articles published in Europe that studied the impact of unemployment on health of young people, and 44 studies supported the hypothesis that unemployment had a declining effect on young people's health. (Utzet & Vancea, 2016.) For some of the unemployed, unhealthy habits, such as smoking and drinking alcohol, become more frequent after unemployment whereas healthy habits, such as physical activity, become less frequent. The unemployed are also more likely to use medication or drugs as a coping mechanism. (Björklund et al. 2015; Caron, Perreault, Perreault & Touré, 2016; Utzet & Vancea, 2016; Ministry of Education and Culture 2019.) Unemployment at a young age often leads the person to experience several issues with mental health, such as low self-esteem, higher level of psychological stress as well as anxiety and depression (Bell& Blanchflower, 2011; Carlsen et al. 2011, p. 19; Olafsson & Wadensjö, 2012; Hammarström, Nilsson, Strandh and Winefield, 2014; Hammarström, Nilsson, Nordlund & Strandh, 2015). Personal interviews with Finnish NEET-youth and a comparison group reported that the NEETs were less satisfied with their life in general, as well as reported less satisfaction with each of the researched matters: overall- and mental health, relationships, appearance, free-time, fitness level and financial situation (Finnish Youth Research Society, 2017).

Björklund et al. (2015) interviewed unemployed Finnish men aged 18 to 27 years and their results revealed that unemployment was followed by strong negative effects. The interviewed men described feelings of vagueness, losing their life purpose and having difficulties with maintaining structure in their lives. They reported that it was difficult as well as felt pointless trying to have a normal circadian rhythm since there was no work or classes to attend. Their awaking hours were often spent with online computer games, online gambling or watching television. They did not have the desire or energy to perform even the simplest everyday tasks, such as shopping, cooking, cleaning, making the bed, or taking a walk.

The unemployed men whom Björklund et al. (2015) interviewed expressed feelings of shame and despair over their circumstances. They reported feeling excluded from the society, losing their identities, and guilt over feeling like a burden to the society rather than contributing to it. They often compared themselves to those family members and acquaintances who were working, and several reported high levels of stress and wished for a better self-esteem. The unemployed interviewees admitted wondering if they will ever find employment again, and what will happen to them if they would stay on the sidelines of the society for a long time.

Employment status significantly affects the person's probability to develop depression and affects mental health not only among those who are unemployed, but also among the people who experience job insecurity or underemployment (Caron et al. 2016; Utzet & Vancea, 2016). In their study of insecure employment being a risk factor for poor mental health in young individuals, Bodin, Canivet, Emmelin, Moghaddasi, Toivanen and Östergren (2016) found that insecure unemployment was an important determinant in the development of mental health problems in previously healthy young people. Insecure employment was defined by Bodin et al. (2016) in their study as experiencing unemployment periods or underemployment, holding employment only through a staff-for-hire enterprise or having a short-term working contract. Of the 3420 Swedish people (aged 18-34) participating in the study who did not have any previous mental health issues, 18 per cent had developed problems with their mental health after precarious employment.

Especially for the young, unemployment often increases dependency on parents and authorities and limits the right to oversee one's own life (Carlsen et al. 2011, p. 19). When young unemployed Finnish men were interviewed, they reported having hardly enough money to buy the necessities and not affording anything extra, which made them feel uncomfortable and excluded in the society (Björklund et al. 2015). Moser and

Paul (2009) stated that the negative effects of unemployment were more severe in countries where the unemployed faced more financial difficulties:

> *Furthermore, the negative effect of unemployment on mental health was stronger in countries with a weak level of economic development, unequal income distributions, or weak unemployment protection systems compared to other countries.*

Better social benefits, accessibility to professional help and financial support from friends and family prevent the forming of mental health problems for the unemployed. Social support received from relatives did not lessen the risk of health problems and those young unemployed people who lived alone did not have a greater risk in terms of health problems than those who lived with their parents. Previous work-history and expectations of employment in the next 12 months were seen to affect the forming of mental health problems, whereas the current work status had only little effect. Unemployment was the most damaging when combined with financial hardship, and marginalization was observed to occur mostly to only those unemployed who also had financial problems. Hammer (2003) describes the link of unemployment, wellbeing and financial means as follows:

> *How people experience unemployment is dependent on the availability of financial resources, which make it possible to stabilize and maintain an established lifestyle, to uphold and extend social relations and which are often a prerequisite for taking part in social activities. Financial resources also promote a feeling of control over the life situation and increase independence.* (Hammer, 2003, pp. 135-136, 184-190.)

The long-term unemployed youth are possibly in danger of becoming marginalised in the labour market. This refers to a state where the individual is permanently a disability pensioner or in other ways dependent on authorities and benefits. Marginalisation can lead to a long-term or even permanent absence from the workforce because of reasons such as illness or rehabilitation. (Carlsen et al. 2011, p. 19.) Not all unemployed are on

the path to exclusion from the labour market, but long-term unemployment will often be the first step in the process of the person becoming marginalised (Carlsen et al. 2011, p. 19; Arnardottir, 2020).

Social exclusion can be described as being left outside of the activities considered normal in the society. Young people who are typically described as socially excluded are those left without education, employment or other such activities. For a person to become socially excluded is a process that takes a long time when different risks lead to problematic environment, poverty and lack in wellbeing. (THL& Me-säätiö, 2018.) Eurostat (2019) states social exclusion being a serious risk in the EU:

> *In 2017, 113.0 million people, or 22.4 % of the EU population, were at risk of poverty or social exclusion. This means roughly one in five people in the EU experienced at least one of the following three forms of poverty: monetary poverty, severe material deprivation or very low work intensity of their household.*

Experiencing poverty and social exclusion can lead to the person being trapped in this problematic environment. Social exclusion affects the person's health and wellbeing, and this further reduces the possibility of leading a successful life when the marginalisation makes it hard for the person to find a way out of the situation. Eurostat (2019) states that especially poverty is often passed from one generation to the next. (Eurostat, 2019, p. 11.) However, social exclusion does not necessarily last for the person's entire lifetime. Most of those in Finland being socially excluded at one point in their lives can eventually return to be active members of the society. (THL & Me-Säätiö, 2018.) Social exclusion and poverty can be prevented by strengthening working skills, decreasing unemployment and the lack of prospects, and offering social security and basic services (Ministry of Social Affairs and Health, 2020).

The next two figures introduce some factors linked with social exclusion. The first figure reveals the top eights causes that Finnish NEETs (aged 15-29) counted to be the main reasons for their social exclusion. The NEETs reported that these factors had had either a considerable or a somewhat considerable effect on the process of their becoming socially excluded. The evaluation results revealed that social issues, such as lack of friends, spending time in negative or problematic company and possessing an unfavourable family background belong to the most significant causes of social exclusion. The most significant cause, lack of friends, was defined by 85 per cent of all the interviewed NEETs as a major reason for their exclusion. In addition, more than 70 per cent of them stated unemployment and low income as major causes for their exclusion.

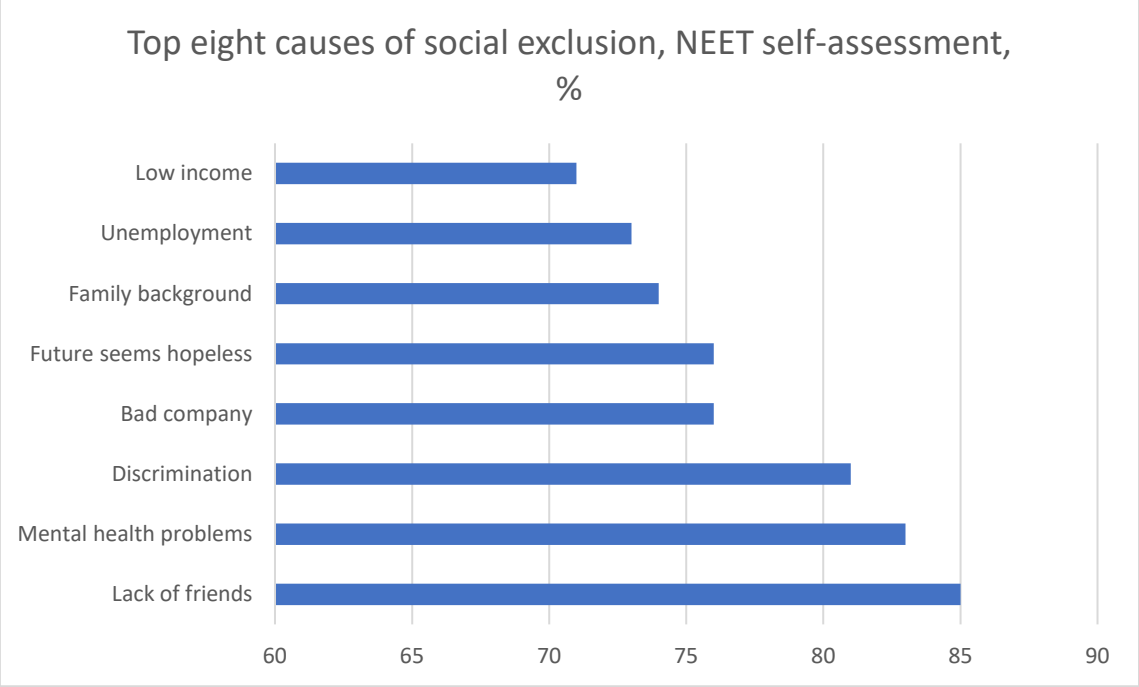

Figure 3. Top eight causes of social exclusion, self-assessment done by 117 Finnish NEETs (aged 15-29), %. (Finnish Youth Research Society, 2017)

The following figure with data from 2018 illustrates the top eight risks in childhood and early adulthood that can lead to a person in Finland becoming socially excluded. In general, the risk of becoming excluded at some point in the person's life is six per cent.

The three most significant risks linked with social exclusion were that the child was taken into care between the ages of 12 and 16, not holding a secondary education degree at the age of 25, and that the child was taken into care before the age of six. The top three risks each suggested that there was about one third of a chance that the person will later become socially excluded. Poor family background and not applying to further education right after primary school each suggested about one fifth of a chance to become socially excluded later in life. Especially, there is a significant risk of becoming excluded at some point in life when a child grows up in an environment with multiple risk factors (Ministry of Social Affairs and Health, 2020).

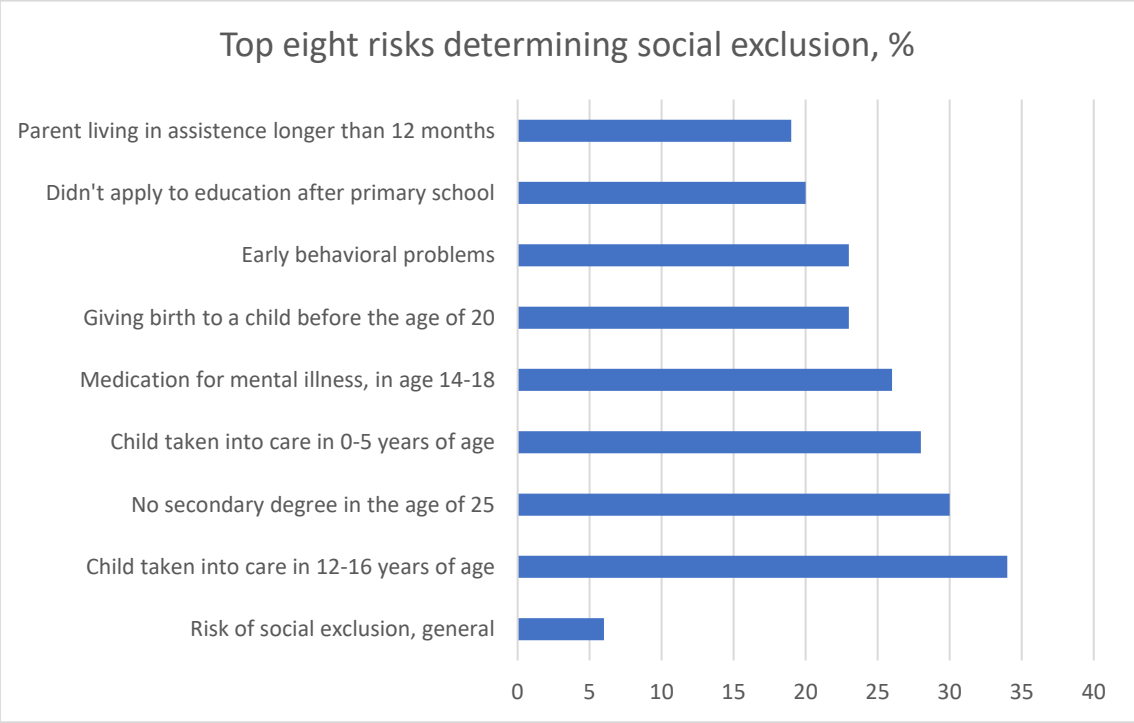

Figure 4. Top eight risks in childhood and early adulthood to determine social exclusion in Finland, %. (THL& Me-säätiö, 2018)

The rest of this chapter introduces how some factors – age, sex, education, disabilities, health, ethnicity, household type and family background – affect the person's risk to experience unemployment, social exclusion or poverty. Since this thesis's focus is on

youth unemployment, the part that discusses age covers only the implications of young age.

2.3 Age

The youth labour market is volatile and easily affected by recessions. Bell and Blanchflower (2011) suggest that this is because the young possess less specific human capital than the other employees. Carlsen et al. (2011, p. 13) write that the young experience more unemployment because they possess fewer qualifications, experience, maturity and social skills needed in the labour market than the older workers. Hiring new employees is a major and long-term commitment if the employees have far-reaching protection. Therefore, the information need for the applicant's likely performance as an employee is increased. The youth do not often have much work experience, so it is a risk for the employer to hire them when there is uncertainty about their productivity. (Olafsson & Wadensjö, 2012.)

Transition from education to work can get difficult during a worsened economic situation when the firms hire fewer new employees than before. (Bell & Blanchflower, 2011). Especially in 2008, many of those young people who graduated from education became unemployed due to the financial crisis (Carlsen et al. 2011). Employers might fire their excessive workers according to lifo-rules (last in, first out) – as always in Sweden – and the newest employees in companies are often the younger workers. In addition, disproportionately many young people are working in construction and other such fields that are especially volatile to the changes in the GDP. (Bell& Blanchflower, 2011.) Moreover, underemployment is more common among the young workers as well as temporary contracts that are easier to terminate. (Bell & Blanchflower, 2011; OECD, 2016).

The following table presents the Nordic countries- and OECD-unemployment rates in June 2020 in the youth- and adult workforces as well as the share of NEETs from the total age group (15–29-year-olds) in 2019. Youth unemployment was high both in absolute figures and compared to the adult unemployment. It was the highest in Sweden where the unemployment of the young was 28,8 per cent and more than four times the adult unemployment. Finland had more than 20 per cent of its young workforce unemployed, the other Nordic countries approximately 11-13 per cent, and OECD in average 16,9 per cent. The NEET-rate in 2019 was lower in the Nordic countries than in the OECD-countries in average. The smallest NEET-rate was in Iceland, where 6,3 per cent of the age group were not in employment, education, or training. The biggest share of NEETs from the age group was in Denmark, where the NEET-rate was 11,6 per cent.

Table 1. Unemployment rate by age group (June 2020) and NEET rate (2019) in the Nordic countries and in OECD, %. (OECD, 2020c; OECD, 2020d; OECD, 2020e)

	Unemployment rate, 25–74-year-olds	Unemployment rate, 15–24-year-olds	NEET rate, aged 15-29
Denmark	4,9	12,6	11,6
Finland	6,0	20,5	11,0
Iceland	3,4	11,0	6,3
Norway	4,1	12,8	7,9
Sweden	6,8	28,8	7,0
OECD-total	6,9	16,9	12,7

Unemployment and inactivity early in life can lead to permanent financial difficulties, ill mental- and physical health and social exclusion. Especially the income level and working career of a person are affected by early life unemployment experiences throughout the entire life cycle. (Olafsson & Wadensjö, 2012, pp. 3,7.) Hammarström, Nilsson, Nordlund and Strandh (2015) describe how youth unemployment can start a chain reaction that causes socioeconomic scarring:

> *Open youth unemployment have been found to lead to different forms of socioeconomic scarring, such as increased risk of further unemployment and worse income development. This process of socioeconomic scarring could lead to "social chain reactions" whereby the initial open youth unemployment experience leads to a non-optimal socioeconomic career and exposure to conditions that are not conducive to good mental health, thus leading to the found long term mental health scars of open youth unemployment.*

Bell and Blanchflower (2011) discovered that experiences of unemployment in early adulthood create scars in salary and wellbeing that last long into the future. At the age of 50, there were significant effects on weekly wages and happiness from early adulthood unemployment. These effects were stronger than those effects of recent unemployment experiences. Hammarström, Nilsson, Strandh and Winefield (2014) reported similar results of unemployment at a young age causing long-term scarring effects to mental health and unemployment later in life not having the same negative long-term effects. Hammarström, Nilsson, Strandh and Winefield (2014) suggest that the reason behind these results might be that early adulthood is a more critical period for the development of identity. Similarly, Hammarström, Nilsson, Nordlund and Strandh (2015) explain the long-term mental health scarring of youth unemployment with the lack of the psychological functions that employment would provide. These functions include among others regular activity, social contacts, time structure as well as employment identity being strengthened by employment. In addition, they suggest that unemployment at a young age diminishes the skills to cope with stress and increases experienced hopelessness and helplessness.

2.4 Sex

Hutengs and Stadtmann (2014) compared changes in the unemployment rates of men and women in the Nordic Countries and reported that the unemployment rate of men

was affected by the fluctuations in the GDP more strongly than the unemployment of women. This was explained by men being over-represented in fields that are vulnerable to cyclical changes. (Hutengs& Stadtmann, 2014.) However, women are often over-represented in those fields that are lower paid. In addition, gender gaps in the labour market arise due to women's greater connection to family responsibilities. Even with similar qualifications and activity patterns, women gain lower labour market returns (career development and earnings) than men. Some unemployment of women can be hidden, when the women state the reason for their economic inactivity being voluntarily engaged in family responsibilities, when in reality they might be facing difficulties in finding employment. (Fagan, Melling & Urwin, 2006, pp. 8-9; Confederation of Finnish Industries (EK), 2013.) A study from Grönlund, Halldén and Magnusson (2016) reported that women in Denmark, Finland, Sweden and Norway were earning lower wages and were less likely to be in an authority position than men even after work interruptions, parenthood and occupational gender segregation were taken into account.

In Europe, women are more likely to experience social exclusion or poverty than men. One explanation to this is stated to be women's lower average earnings and later in life their lower pensions. Having a low income for a long time period causes the individual stress and has negative effects on housing quality, health and social relations. Furthermore, in Europe there are more women than men who belong to those groups which have a higher risk of poverty or social exclusion. Female dominated disadvantageous groups include for example older persons, single parents and victims of domestic violence, whereas male dominated groups include for instance homeless people and ex-prisoners. Even inside the disadvantageous groups, women are in a greater risk of poverty and social exclusion than men – for example, the elderly women have a greater risk of exclusion and poverty than the elderly men. (Fagan et al. 2006, pp. 7-8.)

Hammarström, Nilsson, Nordenmark, Russel and Strandh (2012) found unemployment to affect the mental health of men and women differently only in those countries where men and women have differing roles in the family and in the society. In countries where female participation in the labour market is high and encouraged, such as for instance in the Nordic countries, men and women have equal mental health consequences of unemployment. Alternatively, in countries such as Spain, Germany and Ireland, where the female workforce participation is lower and housework is more encouraged, unemployment causes less mental health problems among women than among men. Hammarström, Nilsson, Nordenmark et al. (2012) argued that gender per se does not determine the individual health- and other consequences of unemployment. Rather, in some societies the different gender roles for men and women lessen the women's psychological and economic need for employment, which allows them to adapt to the situation more easily than men.

2.5 Ethnicity, household type and family background

In 2017, there was a 38,3 per cent risk for those people to experience poverty or social exclusion who were living in the EU but were not born in a Member State. Among those immigrants who were born in an EU-country other than where they were currently living, the risk of poverty or social exclusion was 22,7 per cent, which was almost the same than for those people in EU living in their country of birth (20,7 per cent). (Eurostat, 2019, p. 9.) In addition to the risk of social exclusion and poverty, the risk of unemployment is greater among immigrant workers as well (OECD, 2020c). In the Nordic countries, the transition from education and training to the working life is the most difficult for the foreign-born youth (Olafsson & Wadensjö, 2012). For the immigrants in the EU, the risk of social exclusion does depend greatly on in which country the person

was born. However, for all the immigrants in the EU the risk of social exclusion or poverty increased between 2010 and 2017. (Eurostat, 2019, p. 9.)

Eurostat (2019) states that the causes of the higher risk of social exclusion, poverty and unemployment for some immigrants are their lower level of education, problems with recognising their degrees in the new home countries, barriers in language and communication and discrimination on social and religious grounds. In addition, the general labour market access in each Member State as well as the current employment rate among its foreign-born citizens affect how easily the immigrants can settle in the new home country and find employment. It should be noted on which reason the migrants came to a specific country. It is suggested that non-EU born immigrants do not adapt as well as EU-born immigrants because non-EU born immigrants often migrate because of humanitarian reasons, whereas immigrants from other EU-countries migrate primarily for work. (Eurostat, 2019, p. 9.)

The following table illustrates that foreign-born citizens are more likely to experience unemployment in the Nordic Countries than native-born citizens. In addition, native-born labour participation is higher than foreign-born participation. The exception is Iceland, where the participation rates between these groups were almost the same, the native-born participation being only 0,6 percentage points higher than the foreign-born participation. In the other Nordic countries, participation rates among native-born citizens were 3,1-5,9 percentage points higher than among foreign-born citizens. In the unemployment rates of these groups, the greatest differences occurred in Sweden, where the unemployment rate was approximately four times greater among foreign-born citizens than among native-born citizens. In the other Nordic countries, foreign-born citizens were about twice as likely to be unemployed as native-born citizens.

Table 2. Foreign-born and native-born unemployment and participation rates in the Nordic countries in 2018, %. (OECD 2020f; OECD 2020g; OECD 2020h; OECD 2020i)

	Foreign-born unemployment	Native-born unemployment	Foreign-born participation	Native-born participation
Denmark	9,8	4,3	76,3	80,5
Finland	14,1	7,1	72,4	78,3
Iceland	5,1	2,5	87,0	87,6
Norway	7,9	2,9	75,6	78,7
Sweden	15,7	3,9	79,1	84,1

Single households (with or without children) and families with three or more dependent children are more likely to experience poverty or social exclusion than the other household types. In 2017, the risk of poverty or social exclusion for single people with one or more dependent children was 47 per cent, whereas for people of all household types it was 23 per cent. The explanation for this is that during unemployment, financial hardships or sickness there is no partner to compensate the monetary and other losses. In addition, single parents must be the primary caregiver of the family as well as provide for the family financially. Furthermore, many single households consist of young unemployed people or pensioners, and both unemployment and old age are strong risk factors in terms of social exclusion and poverty. (Eurostat, 2019, pp. 7-8.)

THL states that the childhood family environment creates the foundation for the person's later wellbeing (THL 2016). Especially those children who have been taken into care in the teenage years usually experience several wellbeing-related problems long into adulthood (THL, 2018; THL& Me-Säätiö, 2018). Poverty and its effects usually transfer from parents to their children. In particular, the need for social assistance benefit often continues to the adulthood if a child was brought up in a family that lived on social assistance. Still, the socioeconomic status of the parents does not automatically determine their children's later wellbeing. Even though the childhood living conditions are crucial, it is not supported that the later wellbeing in adulthood or the lack of it would solely be determined based on the childhood experiences. In

preventing poverty being passed on from one generation to the next, it is important to support both the adults and the children and start the support services early. (THL, 2016; Eurostat, 2019; Ministry of Education and Culture, 2019; Ministry of social affairs and health, 2020.)

2.6 Education

The parents' socioeconomic background and education level influence their children's later education. Children whose parents are not highly educated do not often pursue high education themselves. (THL, 2016.) More so, those children whose parents have a higher income (belonging to the highest one-third of the wage-income scale) are more likely to be enrolled in full-time education at the age of 21 when compared to the children of lower wage-income parents (Albaek, Asplund, Barth, Lindahl, von Simson & Vanhala, 2015, p. 237). Those children whose parents did not succeed in school are more likely to lack success in school themselves as well. More so, when a child's parents have low education level, the child is more likely to experience financial difficulties and mental health problems later in life. (THL, 2016.) Explanations for these generational problems might be that parent involvement is important during childhood education and that when the parents are highly educated it is more likely that the child grows up in a safe environment and will receive adequate medical care when needed (Zill, 1996; Barnard, 2004).

Being left outside of education after primary school is a risk factor that can lead to marginalization (TLH, 2018; THL& Me-säätiö, 2018). Weak success in primary school can easily lead to the person not being able to continue to secondary education which in turn leads to uncertainty in the labour market (THL, 2018; OECD, 2020j.) The least educated

suffer the hardest during recessions as well (Bell & Blanchflower, 2011). In addition, unemployment, long-term unemployment, and financial difficulties are more common among the youth who have completed only primary education compared to the youth who have completed at least secondary education. Moreover, the youth who have only primary education have more problems with health, and especially more problems with mental health and overall life skills. (THL, 2018; OECD, 2020j.)

Albaek et al (2015) researched if there were any differences in the labour market outcomes in Finland, Sweden, Denmark and Norway between the people who had completed an upper-secondary degree, and those people who had not. Further, it was examined if the age at which the degree was completed had any effect on later success in the labour market. At the age of 21, the differences in labour market outcomes between completers and non-completers of secondary education were noticeable. In all four countries, 90 per cent of those who had completed an upper-secondary degree before the age of 21 were either studying or working full-time. Of those 21-year-olds who had not yet finished their upper-secondary education, in Denmark only 78 per cent were employed or full-time students and in the other three Nordic countries less than 70 per cent. This suggest that not only is education important, but the secondary degree should be completed in five years or less. (Albaek et al. 2015, pp. 190-191, 278.) Dropping out of education before graduation can lead to an increased risk of unemployment, low income and living in social transfers (Carlsen et al 2011, p. 14). Still, it should be noted that in all of these four countries a dominant activity at the age of 21-31 among non-completers was work or studying, and not all non-completion implies difficulties in coping with social life (Albaek et al. 2015, pp.190-191, 278).

The role of education, especially primary education, is notable in other ways also. Bullying in school is still common. (THL, 2018.) THL's health and wellbeing -inquiry for school children states that from Finnish eight and nine -graders about six per cent experience bullying at least once a week and from students in secondary education one to five per

cent experience at least weekly bullying (THL, 2017). Bullying increases the child's feeling of insecurity and is a serious threat to especially the child's health, study motivation and wellbeing in general (THL, 2019). This can risk later education and employment (THL, 2018).

The youth and young adults who are not in education or working often possess a great risk of becoming marginalised. However, for all of them there is no notable risk of social exclusion. For some of the youth, being outside of work and education can be their own choice that can have a reason of, for example wanting more time to decide which education or work he or she would like to apply to. (THL, 2018.) Many young people experience a NEET-period at some point in their lives but health- and social problems and social exclusion are not common among those young people whose NEET-periods do not last long (Ministry of Education and Culture, 2019).

The following figure illustrates unemployment rates by education level in the Nordic countries as well as the OECD-average. In all these countries, below upper secondary education suggests a considerably higher risk of unemployment than holding at least an upper-secondary education degree. The risk of unemployment for a person without an upper-secondary education is the greatest in Sweden, where the risk of becoming unemployed is about five times greater for those people without upper-secondary education. In the other Nordic countries, the risk of unemployment for a person without an upper-secondary degree is about two times greater as the risk of unemployment for a person with upper-secondary degree, except for Iceland where the risk is about 50 per cent higher. The risk of unemployment does not lower significantly when completing tertiary education, except in Finland, where tertiary education decreases the risk of unemployment almost by a half compared to upper-secondary education. In Denmark, the risk of unemployment is even somewhat higher for those who have completed tertiary education in comparison to those with just upper-secondary education. One possible reason for this could be that the upper secondary -education is less typical school-like in

Denmark compared to the other Nordic countries, and the young Danes gather large amounts of work experience while studying for an upper-secondary degree (Albaek et al. 2015, pp. 273-274).

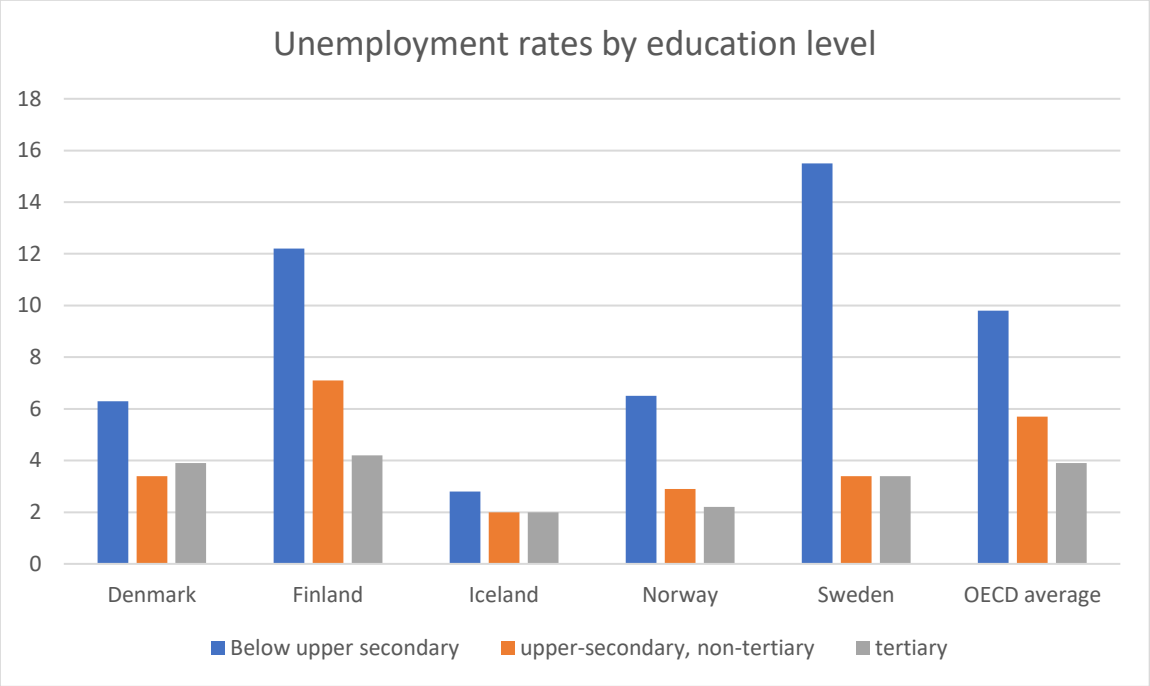

Figure 5. Unemployment rates by education level in the Nordic countries and OECD-average, 25–64-year-olds in 2018, %. (OECD, 2020j)

2.7 Disabilities and health

Even though the overall risk of poverty and social exclusion declined in EU after 2012, the rate remained stable for those people with activity limitations. In 2017, the risk of social exclusion and poverty for those people with activity limitations was higher in all Member States compared to those people without any activity limitations, however, the differences between the Member States were large. The EU-average risk of social exclusion or poverty rate was in 2017 for people (aged 16 or more) without activity limitations 19,9 per cent, whereas for people with some activity limitations it was 26,3 per cent and

for people with severe activity limitations 36,0 per cent. Some of the main challenges for people with disabilities are limited access to quality education from an early age as well as hindered access to the labour market. Social transfers revealed to be of especial importance for disabled persons in terms of monetary poverty. As many as 68,1 per cent of disabled EU-citizens were at risk of poverty before social transfers, however, after social transfers the risk of poverty rate was reduced to 20,5 per cent. (Eurostat, 2019, pp. 6-7.)

According to Turner J. & Turner R. (2004), disabled persons are five times more likely to be unemployed. The emotional impact of unemployment is also greater among those people with physical disabilities. (Turner J. & Turner R. 2004.) Especially after the financial crisis it has been difficult for disabled persons to find employment (Eurostat, 2019, pp. 6-7). A link between unemployment and disability can be found in another way as well. In Norway it is estimated that for men, not having a job more than doubles the risk of entry to permanent disability, and 28 per cent of new disability insurance claims come from the unemployed (Bratsberg, Fevang & Røed, 2010). In the world's wealthiest regions, major depressive disorder belongs to the leading causes of disability-adjusted life-years. Since the unemployed are more likely to suffer from depression as those who are employed, this could be part of the explanation why the unemployed are overrepresented in new disability claims (Moser & Paul, 2009; Helgason, Tómasson, Zoëga, 2018.) In addition to physical disabilities, poor mental health increases the risk of unemployment as well, especially through weaker school performance and dropping out of school before graduation. Furthermore, Arnardottir (2020) suggests that more than half of those who are mentally ill have faced prejudice in the labour market. (Arnardottir, 2020.)

Heggebø (2015) examined if people with poor health in Denmark, Norway and Sweden are more likely to lose their job than their healthy counterparts. The results reported health selection to exist only in Denmark and not in Sweden or Norway, however, those

people with health issues being under 30 years of age were more likely to be unemployed than people with better health in Norway and Sweden but not in Denmark. Heggebø (2015) states the possible explanation for this difference in health selection to be the Danish flexicurity model where the employment protection is quite weak. Hoffmann, Kröger and Pakhapan (2015) explain that health selection might exist because the health of the employee affects his or her productivity, the number of sick days as well as other absences from working, and these factors will lead the employers to favor those workers who have a better health. Hoffmann et al. (2015) as well as Utzet & Vancea (2016) suggest though, that there might be a third factor explanation that should be considered. It could be that certain personality traits as well as differences in resources and support are responsible for both a healthy lifestyle and educational and economic success. (Hoffmann et al. 2015; Utzet & Vancea, 2016.)

3 NORDIC LABOUR MARKET MODELS

There are mainly three types of welfare systems in Europe. In the Nordic countries, the institutions and state play the greatest role of care for its citizens when something unfortunate such as unemployment takes place, and the role of the family members is little compared to other countries in Europe. The contrary to this is seen in southern European countries, where the families are the primary source of help in harder times, and the role of the state is lesser. Then there are countries that place themselves in the middle of the Nordic and Southern models, such as Germany and United Kingdom. The share of those youth that are unemployed and will become marginalised varies greatly between countries. There seems to be less marginalized youth when the social benefits become more generous. However, even if the young receive adequate benefits from the state, the risk to become marginalised is still high if the country has poor policies and programs to help the unemployed integrate back to the labour market. This is seen in the case of Finland, where despite of good social benefits the risk of social exclusion is high for the unemployed. (Hammer, 2003, pp. 135, 142-143.)

The youth unemployment rate tends to be particularly high during recessions (Bell & Blanchflower, 2011; Carlsen et al. 2011, p.11). The Nordic countries faced different consequences after the 2008 financial crisis, but a common factor was that the youth unemployment rate rose quickly between 2008-2009 in all the five countries, and particularly in Sweden, Finland and Iceland. Denmark and Norway had low unemployment rates before the crisis, and although the unemployment rate among the young increased in Denmark and Norway as well, they were not as severely hit after the crisis as the other three Nordic Countries. Norway survived the crisis well especially because of its large public surpluses and the high prices of oil, whereas Denmark emphasized active politics to help the unemployed. (Carlsen et al. 2011, pp. 8-9.)

It is reasonable to compare the outcomes of labour policies of the Nordic countries since they share many features concerning labour market regulations and have similar economies and societies in general. The bargaining systems are based on strong trade union movements and their role in the regulation of the workers' conditions and wages is crucial. Objectives that have traditionally been given broad political support include basic income security, equal rights to education, paying taxes according to the person's ability and limited income inequalities. Social systems have received great support and investments to support these objectives. Although these five countries are small and their economic success depends highly on developments in the world around them, there has still been room for national political choices concerning social policies and national labour market regulation. (Andersen, Dølvik & Ibsen, 2014, pp. 10-15.) An example is the flexicurity model in Denmark that allocates more resources to training but with greater uncertainly in keeping jobs (Martens & Schubert, 2015, p. 110; Lykketoft, 2009. p.12). Iceland has more direct interlinkages between policies and actions and has over long time been able to have low unemployment. Therefore, it has been relatively easy for young people to find and switch jobs so that social exclusion from long unemployment periods is lower. (Carlsen et al. 2011, pp. 61-71; Arnardottir, 2020; OECD, 2020e). These political decisions -most notably, choices regarding the balance between central and local negotiations and the regulation of working conditions and wages - can create differences in the level of welfare between the Nordic countries. (Andersen et al 2014, pp. 10-15.)

The rest of this chapter introduces some main characteristics of the labour markets in the five Nordic countries.

3.1 Iceland

Before the financial crisis of 2008, compared with other Nordic countries Iceland had low rates of unemployment. The unemployment rate in Iceland was 1,2 per cent in the summer of 2008, whereas in the spring of 2009 it was 9 per cent. This rapid rise had the greatest effect on the young employees, especially on young men. From all fields of employment, unemployment rate rose most in the construction sector, where about 30 per cent of employees were without employment in the spring of 2009. Youth unemployment in total rose from 6 per cent in 2008 to 14 per cent in 2009 and 2010. The long-term unemployment rate from age group 16-29 years was 45 per cent for both genders in 2010, when during the years of 2000-2008 this share fluctuated between greatly lesser numbers; between 5 and 15 per cent in respect of young men and between 10 and 20 per cent in respect of young women. (Carlsen et al. 2011, pp. 61-64.) The NEET rate of Iceland rose as a response to the financial crisis as well, from 5 per cent in 2008 to 13 per cent in 2009 (Arnardottir, 2020).

Many labor market initiatives were offered to young people in order to help them find employment or education. These initiatives included wage-subsidies for firms to hire young unemployed workers, work-training, opportunities to continue studies, and help with developing those business ideas that would likely provide the unemployed person in the future. In 2010, the number of young Icelanders participating in initiated training or education was 3788 persons, and 326 individuals were in initiated work practice. (Carlsen et al 2011, pp. 64-66.)

The goal of the unemployment benefits in Iceland is to provide for a proper livelihood while looking for employment after losing one's job. In order to receive the benefits, the person must have worked full time 12 months in the period of the past 24 months and be registered to look for work in the Directorate of Labor. Beside the unemployment

benefits, other means of security provided to the unemployed include financial support to cover expenses if the worker must move elsewhere for employment, study grants, and lower prices of health services after six months of unemployment. If the unemployed individual cannot claim these benefits because of the lack of work experience or other reasons, financial social assistance is granted. (Carlsen et al 2011, pp. 67-70.)

3.2 Norway

The hard forms of unemployment, which are long-term unemployment and unemployment among the youth, are of special interest and an important theme of Norwegian politicians. Their main aim is to avoid especially situations were young individuals become unemployed for over a year or socially excluded from the society. Since the beginning of the 1990s the social norms in Norway have shifted toward a state, where working and earning one's living independently is not only seen as a duty. In addition, it is a right to earn one's own income and have the chance to use and develop one's abilities and skills as well as gain the social benefits of working. (Carlsen et al 2011, pp. 26.) OECD rates the labour market conditions of the young in Norway being among the most favourable across OECD countries (OECD, 2018). The youth unemployment rate is low in Norway compared to other Nordic countries, but still considerably higher than among the overall population and fluctuates more with business cycles than the unemployment rate of the workers being 25 and older. This is due to the reason that during recessions the workers with less work experience are usually the first to be laid off. In addition, entering the first job after finishing education is harder during financial crises, when the graduates must compete in the recruiting process against those applicants who already have experience from the field. (Carlsen et al 2011, pp. 26-27.)

Due to the recession that began in 2008, jobs were lost especially in the fields of construction, export, and building. Little differences in the unemployment rates were observed between the sexes, men experiencing slightly more unemployment than women. These differences were explained by men working more often in fields vulnerable to fluctuations in the business cycle such as building, whereas women often work as teachers, nurses and in other occupations where recessions do not affect the workplace that much. (Carlsen et al 2011, pp. 27-30.)

Immigrants, especially the non-Western ones, were observed to be more vulnerable to unemployment and twice as likely to be NEETs than Norwegians (Carlsen et al. 2011; OECD, 2018). One reason for this is that the employers favour the Norwegian applicants. Apart from this, the non-Western immigrants may lack qualifications, connections, and knowledge of the Norwegian language. When education level and other skills of an individual rise, the risk of unemployment decreases considerably. One advantage for the youth is that their risk to become long-term unemployed is smaller than those workers being in their 40s and above. The young workers are usually more flexible to educating themselves higher or into a new field and are more willing to move to a new city or country. (Carlsen et al 2011, pp. 27-30.)

3.3 Finland

Ministry of Education and Culture (2019) outlines some issues related to unemployed youth that are more severe in Finland compared to other OECD countries. Firstly, every year 67 per cent of Finnish applicants for higher education are rejected, when the OECD-average is only 30 per cent. Only 25 per cent of secondary education graduates can continue their studies right after graduation and the average age to start higher education in Finland is the highest of all OECD countries. This selection forces the applicants to

have gap years and the youth faces a real risk of unemployment when nine out of ten job openings in Finland require a high skill level. Secondly, a relatively large share of 15-24-year-old Finnish people who belong to the workforce are working with temporary contracts (44 per cent) or would like to work full-time but have only managed to find part-time work (24 per cent). Both indicators are considerably higher than the OECD-average (25 and 14 per cent). Thirdly, mental health problems and substance abuse are more common among the Finnish NEET youth compared to the NEETs in other OECD-countries.

Finland has several labour market policy initiatives aimed towards the unemployed. These include among others work practice and employment training, employment subsidies, information and guidance as well as job alternation leave. Job alternation encourages the employee's wellbeing and offers the unemployment person to gain work experience. The employer gains new know-how for the work community. (Carlsen et al 2011, pp. 92-94; TE services, Ministry of Employment and the Economy, 2021.) Youth guarantee entered into force in Finland in the beginning of 2013. It guarantees every young person under 25 years and every graduating student under 30 years a job, education or trainee place, workshop coaching or rehabilitation, the guarantee offers taking place at the latest three months after the individual became unemployed. The youth guarantee includes education guarantee, which means that every student who graduates from primary school will be guaranteed education in high school or vocational school, apprenticeship contract, workshop coaching, rehabilitation or other such activities. (City of Turku, The Education Division, 2020.) Another policy measure that aims to lower the youth unemployment rate is the "Sanssi card" that was administered in May 2010. The card gives the employers an opportunity to get wage subsidies when they hire newly educated people younger than 30 years. The wage subsidy is 700 euros per month and can be used up to ten months. (Carlsen et al 2011, p. 87; TE services, Ministry of Employment and the Economy, 2014.)

3.4 Sweden

Swedish labour market policy's main goal is to increase the incentives to work and for the employers to hire. A special emphasis is on the youth unemployment. Some policy measures that aim to lower the youth unemployment rate include labour market training, subsidized work, support towards starting a business and job guarantee for young people, which guarantees work practice or education for everyone being 16-24 years of age. In some cases, job guarantee may instead practice or studying include rehabilitation or support with starting a business. Young people can participate in the program up to 15 months and start the program after three months of unemployment. (Carlsen, 2011, pp. 50-55; OECD, 2020k.)

The completion rate of secondary school is lower in Sweden than in the other Nordic Countries. The higher proportion of foreign-born students in Sweden is not agreed to be a reason for this, since in Norway as well many students have an immigrant background. Olafsson and Wadensjö (2012, p.17-18) link three factors with the lower completion rate of studies in Sweden. First, Sweden has an age limit of 20 years which prevents some of the students from completing the education. Secondly, it may be that several Swedish students are not adequately prepared for their studies. In Norway, the compulsory school is ten years whereas in Sweden it is nine years. In Finland and in Denmark, the students who find it hard to meet the requirements of secondary education after the nine-year compulsory schooling are offered a possibility of a tenth supplementary year before entering secondary education. In addition to this, the other Nordic Countries offer more tuition for students with special needs. Thirdly, the design of vocational training is more theoretic in Sweden compared to the other Nordic countries which have extensive vocational training being a part of the education. This can result that those Swedish students who are less motivated to study are more likely to interrupt their education. (Olafsson & Wadensjö, 2012, pp. 17-18.) OECD (2020k) recommends that for

Sweden to lower its NEET rate it should reduce its upper secondary dropout rates and promote apprenticeships.

A group in all the Nordic countries that is particularly vulnerable to unemployment is the non-western immigrants. In Sweden, the group that experienced the highest risk of unemployment were young men of non-western origin. The most important factors that determine whether the non-western immigrants can find work, are their level of education and how long they have been living in Sweden. For those who have been living in Sweden for four years or less, the risk of unemployment is five times greater than for those who have lived in Sweden for 30 years or more. (Carlsen et al. 2011.)

3.5 Denmark

Lykketoft (2009, p. 31) describes the Danish model having five basic characteristics. Both men and women have high labour market participation and differences in living standards between citizens are small compared to other countries. The public sector is citizen-friendly, highly effective and corruption is practically non-existent. Taxation system in Denmark is progressive, and the state pays most of the cost of health care, education, childcare and elderly care. The heavy taxation does not harm the employment but on the contrary it gives Denmark competitive power when the state invests in for example education, research and development, and infrastructure. Corporate taxes and social contributions from employers are low, and the tax revenues are mostly gained through high taxation on consumption and private income. (Lykketoft, 2009, p. 31.) Another component of the Danish model is ensuring active labour market participation of women, especially with the ability to combine working life and family life. Most women want to enter the labour market and participation is almost as wide as among men.

However, women still do not make a career as the same extent as men, carry more responsibilities in childcare and household duties, and are more likely to work part-time. (Martens & Schubert, 2005, p. 110; Lykketoft, 2009, pp. 12-13, 15.)

Thus, Denmark shares many features with the other Nordic Countries, such as high social security and economic equality. However, it has a more liberal labour market than the other Nordic Countries. The unique societal model of Denmark has been called the flexicurity model since it combines flexibility and security. The notice to fire employees is short-term, which makes it easier for employers to hire and fire staff according to the current market conditions. The Danish employers do not hesitate to hire new employees when they know that it is easy to lay off extra employees when market conditions change. (Lykketoft, 2009, p. 12.) In chapter 2.7 of the thesis, where the person's health status's effect on employment status is discussed, Heggebø's (2015) results reported that the workers with weaker health are more likely to be unemployed than those with better health in Denmark, but not in Sweden or Norway. Although the flexicurity model has helped Denmark to maintain low unemployment rates, it has as well created a situation where those people with health problems face discrimination in the labour market and are worse off compared to their Norwegian and Swedish counterparts.

The security-component of the flexicurity model entails the benefits in the unemployment insurance system. The lowest-paid workers are entitled to an unemployment benefit of 90 per cent of their wage for several years. For more skilled employees, coverage is significantly lower. For example, a skilled metal worker would receive a benefit that is 60 per cent of his or her normal wage. (Lykketoft, 2009, p. 12.) In addition, the Danish system is flexible for its employees. It is easy to change jobs when they do not lose any rights such as paid holidays. Approximately 30 per cent of the labour force in Denmark change jobs every year, corresponding to 700 000 employees. Martens and Schubert (2005, pp.57-58) state that the high turnover of employees shortens the periods of unemployment:

> *High mobility does not necessarily lead to lower unemployment, but rather to shorter spells of unemployment. Many Danes experience a period of unemployment during their working lives, but fewer end up in the ranks of the long-term unemployed than in other OECD countries. (Martens & Schubert, 2005, pp. 57-58.)*

The Danish model entails an active labour market policy aiming at re-training the unemployed and offering employment security, rather than offering only financial security to the unemployed. Everyone who is affected by unemployment should receive a new job, job training or supplementary skills as soon as possible. (Martens & Schubert, 2005, p. 110; Lykketoft, 2009, pp. 12-13, 15.) This labour market policy of re-training and offering advice to the unemployed consist primarily of different activation processes and the job centre employees being in contact with the unemployed at least once every three months. The recipients of the unemployment benefits are in turn obliged to participate in meetings at their job centres and accept the offered activation measures. The activation processes are meant to equip the unemployed with new skills and qualifications that would increase their chance of finding employment. (Martens & Schubert, 2005, p. 62; Carlsen et al. 2011, pp. 72-73.)

4 DATA AND METHODOLOGY

This chapter explains the data and methodology used in the study, which examines two different models. The first model is designed to test how Okun's law can explain the NEET rate of young people of 15-29 of age in Finland and Denmark, the two countries being tested separately. In addition to GDP, sales of antidepressants is added as a variable to explain the NEET rate as well. The second model is designed to test how the sales of antidepressant medication in the Nordic countries are affected by the changes in GDP, number of assistance recipients and unemployment rate. Next, Okun's law is briefly explained, as well as studies previously conducted about Okun's law are provided. This offers the framework for model (1).

According to Okun's law, unemployment rate and the growth of the economy are closely related. One version of Okun's law states that differences between actual and equilibrium unemployment rates are proportional to the deviations that income has from its potential level. According to the other version of Okun's law, change in unemployment rate is negatively related to change in income growth. (Gärtner, 2016; pp 439-440.) Knotek (2007) writes Okun's law difference version as a linear regression model by the following equation:

(1) *Change in the unemployment rate =* α *+* β *(Real output growth).*

Knotek (2007) writes that the parameter β is called "Okun's coefficient" and the parameter is expected to be negative, meaning that the unemployment rate should fall when the GDP growth rate increases. Daly, Fernald, Jordà, and Nechio (2014) state about the significant expected results of Okun's law as follows:

> *"A simple form of this popular rule of thumb says that a 2% drop in inflation-adjusted GDP growth relative to trend is associated with about a 1 percentage point increase in the unemployment rate."*

Okun's law has held well over time, though it has variation from one recession to the next, which Daly et al. (2014) explain by the several adjustments that households and firms must place to survive the shocks in the economy. As well as over time, the Okun's law coefficients differ across countries and sectors as well (Beaton, 2010; Lang, 2014; Bürgi & Goto, 2020). The coefficients appear to be greatest for cyclical sectors such as construction, manufacturing and wholesale and retail trade. (Bürgi & Goto 2020.) Differences in Okun's coefficients between countries arise from their demographic and political inequalities. In countries where there are fewer regulations to protect workers, the relationships between growth and unemployment rates are stronger than in those countries with less flexible regulations concerning hiring and firing of employees. From the Nordic countries, Denmark belongs to the first group and the other Nordics in the latter group. Private sector tends to be affected by changes in output more than public sector. This is because of their differing natures: public sector has a responsibility to provide social security, education, health care and many other government services for its citizens even though the economy is in a recession, whereas in private sector it is easier to lower production volumes. (Lang, 2014.) Okun coefficients are usually greater for men than for women due to women working more often in sectors not as volatile to GDP changes, such as health care and education (Hutengs & Stadtmann, 2014; Lang, 2014). In addition, the relationship between fluctuations in business cycles and unemployment rate tends to be the strongest in the youngest cohorts. (Hutengs & Stadtmann, 2013; Butkus & Seputiene, 2019).

Jardin and Stephan (2012) present evidence of Okun's law being non-linear when studying 16 European countries with quarterly data from 1984 to 2009. Their results supported that unemployment is extremely sensitive to output when the economy goes into downturn, but then the outputs impact on unemployment rates becomes smaller

in the middle of the recession and through. The impact remains weaker when the economy first starts to recover and becomes strong again when the economy is in expansion. Jardin and Stephan (2012) explain this by the firms' risk aversion of positive news being considered less quickly than negative news, which leads to downturns being more sensitive than recoveries. In addition, they explain the troughs being less volatile because firms may want to retain their most skilled workers because of the firms' investments in their training and to avoid having to search for skilled labour when the economic conditions improve. (Jardin & Stephan, 2012). Beaton (2010) reported similar results in Canada and United States of unemployment rates responding more strongly to changes in output during economic downturns.

Model (2) of this study investigates how the sales of antidepressants are affected by changes in GDP, unemployment rate, and number of assistance recipients. Next, previous studies are provided in the subject. Previous studies have found that antidepressant medication is more common among the unemployed and those who experience insecure employment (Elovainio, Ferrie, Honkonen, Kivimäki, Klaukka, Pentti, Vahtera, Virtanen, 2008; Diderichsen, Nygaard, Rugulies & Thielen, 2010; Bjørngaard, Gunnell, Kaspersen, Ose, Pape, 2016).

Bracke, Buffel and Dereuddre (2015) state that the use of antidepressants among the unemployed and those in insecure jobs is partly associated with their declined mental health status due to unemployment. Diderichsen et al. (2010) studied if there is association between job insecurity and the use of antidepressant medication in their three-year follow-up study among Danish employees. Diderichsen et al. (2010) reported that people who had experienced job insecurity, especially long-term unemployment, were more likely to use antidepressants than those people who had not experienced any unemployment insecurity. The results of Diderichsen et al. (2010) were adjusted for age, sex, household type, socioeconomic position, and alcohol consumption of the participants. Similar results of use of antidepressants being more common among those with

unstable employment were registered in Finland and Norway, as well as psychiatric medication was reported being common among the Finnish NEET youth (Elovainio et al. 2008; Bjørngaard et al. 2016; Ministry of Education and Culture, 2019). Further, Bjørngaard et al. (2016) state the risk of having a first purchase of psychotropic drugs being highest around the time of notification.

The regression models that are being tested are simple OLS regression models. The regression models are presented below:

Model (1), which explains the NEET rate in Finland and Denmark:

(2) $neetrate15\text{-}29 = \alpha + \beta_1\, lnGDP\_L1 + \beta_2\, lnmedsales$

Model (2), which explain the sales of antidepressants in the Nordic countries:

(3) $lnmedsales = \alpha + \beta_1\, lnGDP\_L1 + \beta_2\, recipients18\text{-}24 + \beta_3\, lnue$

The data that is been used in model (1) is from Finland and Denmark, and the data that is used in model (2) is from the Nordic countries, from years 2004-2017 for both models. The data is collected from OECD's database or from Nowbase. The following table 3 includes definitions of all the variables used in the models as well as information on the data source. Nowbase indicates the shared database for the Nordic Medico-Statistical Committee (NOMESCO) and the Nordic Social Statistical Committee (NOSOSCO), and OECD indicates the database of OECD. Sales of antidepressants are reported with Defined Daily Dose (DDD), which is a unit of measurement that considers the country differences in the drugs' physical quantity, cost and prescription methods. DDD is defined

by the World Health Organisation (WHO) (2021) as the assumed average maintenance dose for a drug per day for adults. DDD does not necessarily correspond to Prescribed Daily Dose (PDD) since it is only created for the purpose of being a unit of measurement. However, DDD allows to make international comparisons in drug use and examine changes in drug utilization over time. (WHO, 2021.) The variable GDP is used in the models with a lag of one year.

Table 3. Variable definition and measurement.

Variable	Definition	Data source
neetrate15-29	NEET rate, age 15-29 (%)	OECD
lnGDP_L1	(natural logarithm) GDP with lag of one year	OECD
lnmedsales	(natural logarithm) sales of antidepressants (DDD)	Nowbase
recipients18-24	recipients of social assistance, age 18-24	Nowbase
lnue	(natural logarithm) unemployment rate	OECD

The following tables 4, 5 and 6 introduce the descriptive statistics of the variables in the models (1) and (2).

Table 4. Descriptive statistics, model (1). (data from Finland).

Variable	Mean	Minimum	Maximum	Standard Deviation	Observations
neetrate15-29	11.93333	9.9	14.3	1.214006	15
lnGDP_L1	12.17842	11.92538	12.30184	0.1087452	20
lnmedsales	4.158672	3.893859	4.251348	0.119591	14

Table 5. Descriptive statistics, model (1). (data from Denmark).

Variable	Mean	Minimum	Maximum	Standard Deviation	Observations
neetrate15-29	8.909524	5.6	13.3	2.752073	21
lnGDP_L1	12.36187	12.21879	12.45955	0.0672103	20
lnmedsales	4.301285	4.01458	4.445002	0.1273181	14

Table 6. Descriptive statistics, model (2). (data from the Nordic Countries).

Variable	Mean	Minimum	Maximum	Standard Deviation	Observations
Lnmedsales	4.286112	3.893859	4.951805	0.3085832	42
lnGDP_L1	11.34504	9.004288	12.65257	1.436173	60
recipients18-24	8.780769	1.6	16.3	4.423557	52
lnue	1.62904	0.8043987	2.435203	0.4806604	53

In the following tables 7, 8 and 9, the correlation matrices of models (1) and (2) can be observed.

Table 7. Correlation matrices, model (1). (data from Finland with 14 observations).

	neetrate15-29	lnGDP_L1	lnmedsales
neetrate15-29	1.0000		
lnGDP_L1	-0.0270	1.0000	
lnmedsales	0.4450	0.7564	1.0000

Table 8. Correlation matrices, model (1). (data from Denmark with 14 observations).

	neetrate15-29	lnGDP_L1	lnmedsales
neetrate15-29	1.0000		
lnGDP_L1	0.2418	1.0000	
lnmedsales	0.7206	0.5034	1.0000

Table 9. Correlation matrices, model (2). (data from the Nordic Countries with 40 observations).

	lnGDP_L1	lnmedsales	recipients18-24	lnue
lnGDP_L1	1.0000			
lnmedsales	-0.9170	1.0000		
recipients18-24	0.4892	-0.4087	1.0000	
lnue	0.2375	-0.1454	0.8621	1.0000

In tables 7 and 8 it can be seen that NEET rate and sales of antidepressants are positively correlated. The correlation is considerably stronger in Denmark compared to Finland. The correlation between NEET rate and GDP is negative in Finland, as can be expected based on Okun's law. In Denmark however, the results report a positive relationship between GDP and NEET rate. The data consist of only 14 observations, which can be the cause for the unexpected correlation results. In table 9 it can be seen that the sales of antidepressants are negatively correlated with GDP as well as with the unemployment rate and the number of social assistance recipients.

The following chapter presents and evaluates the empirical results of the models.

5 EMPIRICAL RESULTS

This chapter outlines the results obtained from the empirical models (1) and (2) introduced in the previous chapter. In the following tables 10 and 11, the fundamental factors of the first model are introduced.

Table 10. Fundamental factors from model (1), with data from Finland.

Number of observations	14
F (3,10)	5.66
Prob > F	0.0204
R-squared	0.5071
Adjusted R-squared	0.4175
Root marginal standard error	0.95873

Table 11. Fundamental factors from model (1), with data from Denmark.

Number of observations	14
F (3,10)	6.42
Prob > F	0.0142
R-squared	0.5388
Adjusted R-squared	0.4549
Root marginal standard error	1.7828

In the following tables 12 and 13, the regression results from model (1) for Finland and Denmark can be seen.

Table 12. Regression results from explaining *neetrate15-29* (model 1), with data from Finland.

	coefficient	standard error	t-statistics
intercept	298.43332	111.0117	2.69
lnGDP_L1	-24.40979	9.293879	-2.63
lnmedsales	0.1906282	0.0567033	3.36

Table 13. Regression results from explaining *neetrate15-29* (model 1), with data from Denmark.

	coefficient	standard error	t-statistics
intercept	127.3577	192.7764	0.66
lnGDP_L1	-10.7584	15.74012	-0.68
lnmedsales	0.2179501	0.0643937	3.38

Between NEET rate and GDP there is a negative relationship for both countries, which could be expected based on previous studies of Okun's law. For Finland, a one per cent change in GDP is associated with a change of NEET rate of -0.2440979 (0,01*-24.40979). The change is somewhat smaller for Denmark, where it would be -0.107584. Between NEET rate and sales of antidepressants, the model reports a positive relationship for both countries. This is as well in line with previous studies on the relationship between unemployment rate and antidepressant medication sales. In the model, a one per cent increase in the sales of antidepressants is associated with a change of NEET rate of 0.001906282 for Finland and 0.002179501 for Denmark. The first model possesses an

adjusted R^2 of 41 per cent with data from Finland and 45 per cent with data from Denmark. Standard errors are larger for the parameters of lagged GDP. T-values of the parameters are different from zero.

The following table 14 introduces the fundamental factors of the second model.

Table 14. Fundamental factors from model (2).

Number of observations	40
F (3,36)	67.02
Prob > F	0.0000
R-squared	0.8481
Adjusted R-squared	0.8355
Root marginal standard error	0.12732

In the following table 15, the regression results from model (2) can be seen.

Table 15. Regression results from explaining *sales of antidepressants* (model 2).

	coefficient	standard error	t-statistics
intercept	6.43659	0.2258718	28.50
lnGDP_L1	-0.1979016	0.0179211	-11.04
recipients18-24	-0.0074475	0.0115569	-0,64
lnue	0.1074118	0.0966603	1.11

Model (2) is statistically significant and possesses an adjusted R^2 of 83 per cent. All parameters of the model have small standard errors and t-statistics differ from zero. Between the sales of antidepressants and GDP in the model there is a negative relationship. This finding is in line with previous studies. Studies done previously report a positive relationship between unemployment rates and sales of antidepressants, and since the relationship between GDP growth and unemployment rate is negative, the relationship between GDP growth and sales of antidepressants could be assumed negative as well. In the model, a one per cent change in GDP is associated with a change of sales of antidepressants of -0,001979016 (0,01*-6,798579). Between sales of antidepressants and unemployment rate, the model reports a positive relationship. This is as well in line with previous studies. In the model, a one per cent increase in the unemployment rate is associated with a change of the sales of antidepressants of 0,001074118.

Table 15 illustrates that in model (2) the sales of antidepressants have a negative relationship with the number of recipients of social assistance (recipients in age group 18-14). For every unit of increase in recipients of social assistance, there is 0,0074475 decrease in the sales of antidepressants. The sales of antidepressants are not highly dependent on this variable, since e.g., one per cent increase in the amount of social assistance recipients would decrease the sales of antidepressants by only 0,007 per cent. An explanation for the negative relationship could be interpreted for instance so, that when the need for social assistance in itself does not change (no changes in e.g., financial situation), but the criterium which is used to provide social assistance changes so that more people are entitled to social assistance benefits, the level of income for these new social assistance recipients would increase. Previous studies support that social transfers are important in terms of the health- and wellbeing consequences of unemployment and financial hardship.

The following table 16 reports the sales of antidepressants in the Nordic countries in years 2004-2017 with DDD being used as measuring unit. In four of the Nordic countries,

the sales of antidepressants have increased considerably during the reference period. The exception here is Norway, where the increase has not been significant but only small. In Iceland the increase of the sales of antidepressants on the reference period was about 1,5 times the value of 2004, in Denmark, Sweden and Finland about 1,4 times the value of 2004, and in Norway about 1,1 times the value of 2004. Vallgårda (2011) states that the Nordic countries have contradictory ideological statements and policies concerning public health and which treatments would be best for different illnesses. This is evident in the case of the sales of antidepressants, when for example, Iceland had in 2017 its sales of antidepressants (DDD) more than twice the Norwegian sales (DDD). Gottfredsson, Olafsdottir and Sigursson (2009) suggest the reason for the higher usage of antidepressants among Icelanders compared to the other the Nordic countries to be the limited access to alternative treatments like psychotherapy as well as the drugs' perceived effectiveness by users.

Table 16. Sales of antidepressants in the Nordic countries in 2004-2017, DDD. (Nowbase 2021)

	Denmark	Finland	Iceland	Norway	Sweden
2004	55.40	49.10	91.90	52.41	64.33
2005	60.10	52.10	94.81	51.84	66.12
2006	64.90	55.50	92.56	52.74	69.68
2007	70.00	61.10	96.24	54.84	72.14
2008	73.60	63.90	94.68	55.15	73.69
2009	78.30	66.40	96.94	55.53	74.14
2010	84.00	69.20	100.91	56.42	75.82
2011	85.20	70.20	105.80	57.66	79.36
2012	83.20	69.80	108.80	57.16	81.14
2013	80.00	69.40	117.70	56.34	84.33
2014	76.70	68.80	119.10	56.89	87.81
2015	77.03	68.20	129.60	57.83	92.51
2016	76.45	67.60	135.86	57.37	94.98
2017	75.72	70.20	141.43	57.13	96.85

The next chapter offers conclusions to the thesis.

6 CONCLUSIONS

To conclude the thesis, research summary is provided, as well as practical implications of the study. In addition, the study's limitations are discussed and suggestions for future research are provided.

6.1 Research summary

The thesis starts with the theory part that focuses on unemployment and its effect on wellbeing as well as on the labour market models of the Nordic countries. The empirical part of the thesis examines Okun's law as well as how economic cycles affect the sales of antidepressants. Okun's law is here tested in a way that NEET rate replaces the unemployment rate as the variable being explained and the sales of antidepressants are added to the explaining variables. The first model uses data from Finland and Denmark. In the first model, all the studied variables yielded results that are in line with previous studies. In the second empirical model of the study, the dependent variable chosen was the sales of antidepressants, and the explaining variables were GDP, unemployment rate and number of social assistance recipients. Unemployment rate and GDP yielded results that were hypothesized based on previous studies. The effect of social assistance recipients yielded mixed results when the relationship between the explaining and explained variable was found to be negative. One possible explanation for this result was offered. When the welfare policies of a country change so that more people are entitled to social assistance, the income level of these new assistance recipients rises which could help with preventing the forming of mental health illnesses.

6.2 Limitations of the study and practical implications

The first model of the study which examines the effect of GDP changes on NEET rate in Finland and Denmark (each country separately) is conducted with small datasets, containing only 14 observations for each countries. In order to draw more general conclusions, the model should be tested with larger datasets. The effect of unemployment on mental health is studied through examining the changes in the sales of antidepressant drugs in regard to changes in unemployment rate and GDP growth. The sales of antidepressants are used as a proxy for mental health, when in reality it is only one form of treatment for mental illness (Bjørngaard et al. 2016). There are differences in the practices of describing these medications as well as differences in supply of alternative treatments between countries, as well as country differences in clinical practice, national guidelines, and how well the drugs are available to those who need them. For example, part of the reason for high sales of antidepressants in Iceland in comparison to the other Nordic countries is the limited access of alternative treatments (Vilhelmsson, 2013.) In addition, in some countries, it could be that due to the financial stress caused by unemployment, the people who would need antidepressant medication cannot afford them. This is not seen as a problem in regards of the Nordic countries but should be considered if other countries' antidepressant sales patterns are studied (Bjørngaard et al. 2016.)

The negative effects of being a NEET were not considered to be large-scale if the NEET period did not last long. It is therefore crucial to shorten the NEET periods by offering the young work, education, training, or other such activities. In countries where youth unemployment figures are lower, such as in Denmark and Germany, especially training programmes and work subsidies have been given as an explanation to their success, as well as the education programs being planned so that they can answer the needs of the labour markets. Strengthening of these could help lower the youth unemployment figures especially in Finland and Sweden where the youth unemployment is the highest of the Nordic countries.

6.3 Suggestions for future research

For future research, Okun's law for NEET rate could be tested with different and larger data. For example, a variation of the first model of this study could be tested with data from the Nordic countries, Europe, United States or OECD-countries, among others. The model could be tested as well separately regarding male and female NEET rates as well as for different age cohorts. It could be assumed that the NEET rate of the age group of those being 25-29 years of age would be the most more vulnerable to changes in economic cycles, since in the age groups of 15-19- and 20-24 years many are still students. Regarding male and female NEET rates, it could be that the female NEET rate would be less strongly correlated with economic cycles since women work more often in those fields that are not especially volatile to changes in GDP, such as in health care. Further, the amount of those women who experience a NEET period mainly because of their motherhood might not change considerably with the economic cycles. In addition, it could be tested if differences would exist in the vulnerability to GDP changes in the NEET rates of immigrants and native-born citizens, as well as differences between people with disabilities and those without disabilities.

The association between unemployment and some mental health illnesses are not yet covered enough in the existing academic literature. These illnesses include at least eating disorders and personality disorders. A study from Castle, Cistullo, Jenkins, Phillipou, Rossell & Tan (2020) supports the link between unemployment and eating disorders, stating unemployment to be significantly associated with the reduced life satisfaction in anorexia nervosa patients. In addition, whereas there are several studies that examine how unemployment affects anxiety levels, it is not widely studied how unemployment would affect the forming of anxiety disorders. Margraf, Michael and Zetsche (2007) state that unemployment and low income are associated with most anxiety disorders, and there are several studies that state traumatic life events to increase the person's risk of the forming of personality disorders, anxiety disorders and eating disorders (van Dyck,

Vandereycken, Vanderlinden & Vertommen, 1993; Margraf, Michael & Zetsche, 2007; Bernstein & Kong, 2009; Chow, Dai, Wang, Xiao, Zhang, 2012). This might indicate a higher a risk of forming of these illnesses for the unemployed, however, it is unclear, and the question should be researched more. Regarding unemployment and description of psychotropic medication, topics that are not widely covered in existing academic literature and need to be researched more include how changes in unemployment figures affect the sales of mood stabilizers, as well as the effect on sales of z-drugs which are used as a treatment for insomnia.

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