

Unemployment Benefits and Their Usefulness on Labour Outcomes: A Comparison of Nordic Welfare States

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Abstract

This study examines the effects of unemployment benefits on labour outcomes in Nordic countries. Since the welfare state has moved from mere compensation to becoming a social investment, it is important to see how an important welfare provision like unemployment benefits has affected labour outcomes in the Nordics with a sustainable welfare state being the goal. In this study, the questions asked include; are unemployment benefits associated with the probability to be employed in Nordic countries, and are unemployment benefits associated with duration of unemployment in Nordic countries? The study utilizes the Luxembourg Income Study (LIS) data with an observation of 4,485,451 individuals across the 5th to 10th wave (1995-2016). The Luxembourg Income Study (LIS) data is used to run a logistics regression model and a survival analysis test model to measure the probability of being employed in the Nordics after receiving benefits and the duration of unemployment after receiving unemployment benefits. The results from the logistic regression show that a unit increase in unemployment benefits is associated with the probability of being unemployed when other variables are controlled for. The survival analysis test shows that in the two countries (Finland and Sweden) used in the model, the country with lower levels of compensation which is Finland has a shorter duration of unemployment compared to the more generous Sweden when unemployment benefits are controlled for. The study concludes that unemployment benefits do not have a major effect on the labour outcome of employment in the Nordics but can also explain longer unemployment spells amongst those who receive benefits. The study recommended that a panel study follow up on individuals who receive unemployment benefits to better study the effect of the benefits on their labour outcomes.

Keywords: Unemployment benefits, welfare, labour, Nordic

INTRODUCTION

The welfare state has in recent times come under question in terms of administration and sustainability during times of changing dynamics in society. One particular area that concerns the welfare state relates to unemployment benefits as regards its purpose, which is shielding people from the effects of unemployment and facilitating their access to employment.

This study examines unemployment benefits in the Nordic countries to see how they affect labor outcomes. The different welfare models as regards unemployment benefits and labor structures of the Nordics will be studied to see how they compare in labor outcomes. The study will also highlight the unemployment benefits/insurance provisions in each Nordic country to see the level of compensation the benefits offer and the duration in which these benefits can be received.

In Esping-Andersen's (1990) grouping of welfare regimes, the Nordic countries were grouped under one model which is the Nordic welfare model or Scandinavian social democratic model due to similarities in their welfare provisions. Some of the similarities Nordic countries share in their welfare model include heavy reliance on the public sector for social welfare provision which leads to high public expenditure and taxation, high employment rates and active labor market policies, and a heavy reliance on export-focused industries (Kuisma and Nygard, 2015; Nygard, 2023). According to Kangas and Palme (2005), another area of similarity is that Nordic countries have extensive coverage of social rights with a combination of universalism and means testing of social transfers.

These characteristics of the Nordic model have led to some changes in society such as female emancipation and high level of employment for women which has seen the rise of a dual-earner model in families, a relatively high level of equality, and low poverty rates when compared internationally (Hillamo et.al, 2013; Kuisma and Nygard, 2015).

However, Kuisma and Nygard (2015), posit that instead of generalizing on one ideal typical Nordic model, it is more appropriate to talk about Nordic models which help to show some differences in how the individual Nordic countries go about their welfare. This suggests that there isn't one encompassing Nordic model as most people think but there are underlying differences in the welfare models of individual Nordic countries. The differences in the welfare model of individual Nordic countries created possibilities for important social reforms such as the Swedish pension reform, Danish policies associated with flexicurity (a tripartite of flexibility in the labour market, social security, and active labor market policy), and changes in Finnish family policy (Kuisima and Nygard, 2015). Additionally, the welfare model of individual Nordic countries includes differences in how responsibility for social policies is distributed between the state and local authorities, differences in economic structure and also differences in social policies and outcomes they produce (Nygard, 2023).

The study will take a look at existing literature on unemployment benefits and labour outcomes and also a theoretical perspective that can help explain the association between benefits and labour outcomes.

This study is important because it will examine how unemployment benefits are distributed in the different Nordic countries and find out how these benefits impact employment and the lessons that can be learned from the Nordics in the bid to create sustainable welfare states.

UNEMPLOYMENT BENEFITS IN NORDIC COUNTRIES

The similarities in which the Nordic countries administer their social welfare has been well established and also led to them being grouped as the Nordic social welfare model according to Esping-Andersen. However, Furaker et.al (1990) conclude that there are differences in how these Nordic countries deal with unemployment even though they use similar measures in addressing unemployment such as spending large amounts of cash and other resources to reduce unemployment or the burden of unemployment.

Furaker et.al (1990) argue that the difference in unemployment benefits administered in the Nordics is made clear by distinctive active and passive measures used by the Nordic countries. They posit that active measures/active labour market policies are geared towards commodification of labour power to keep the salability of labour power in the market. They also posit that passive measures have no element of commodification but are linked to conditions that individuals receiving benefits take available jobs in the labour market. Furkaer et.al (1990) then conclude that the Swedish labour market is the clearest representation of the active measures and commodification of labour power because it is most oriented towards making employment attractive to people. On the other hand, they say that the passive measures approach is represented by Denmark where cash benefits are the most important factor. They identify Finland and Norway as being in between these two poles as regards the administering of unemployment benefits thereby establishing differences in the ways unemployment benefits are administered within the Nordic social welfare model.

The Nordic countries used in this study include Denmark, Sweden, Norway and Finland. These countries are located in the region of Northern Europe and are usually referred to as the Nordics together with Iceland who are not included in this study. Iceland is not included because there

isn't enough data on unemployment benefits given in Iceland from the study's data source compared to the other countries in this study.

Table 1 shows the main differences between unemployment benefit provisions and the duration of the benefits in the Nordic countries.

Table 1. Unemployment Benefits in the Nordics (Frelle-Petersen et.al, 2020)

	<i>Unemployment Insurance</i> (Voluntary/Mandatory)	Coverage Period	Compensation Level
Denmark	Voluntary	24 months	Up to 90% of previous salary, capped at a certain amount
Finland	Voluntary	18 months	48%-69% depending on previous salary level
Norway	Mandatory	12-24 months	62.4% of previous salary, capped at a certain amount
Sweden	Both	11 months	Up to 80% of previous salary, capped at a certain amount

First, we look at Denmark, which Table 1 indicates has a policy of voluntary membership for unemployment insurance. In Denmark, insured individuals receive benefits financed by insured employees, the state, and to a small extent their employers (Nordic Health & Welfare Statistics, 2022). Also, the criteria for qualifying for the benefits is to have worked as a full-time employee for up to 1 year. The benefits can last as long as 2 years.

In Table 1, the unemployment insurance for Finland is also voluntary. However, unemployment benefits in Finland consist of a basic unemployment allowance and benefits obtained from previous income which is unemployment insurance (Nordic health & welfare statistics, 2022). In Finland, unemployment insurance finances individuals' earnings-related benefits while the Finnish Social Insurance Institution (KELA) is responsible for the basic unemployment allowance.

In Norway, unemployment insurance is mandatory for everyone which differentiates it from Nordic countries. The unemployment insurance scheme in Norway is financed from the national budget and is run by the Labour and Welfare Administration (NAV) of Norway (Nordic health & welfare statistics, 2022).

The unemployment benefit scheme in Sweden includes insurance and voluntary unemployment insurance. This also makes it unique in comparison with the other Nordic countries. The insurance here is financed by unemployment insurance funds, contributions to the state and labour market contributions to the state paid by employers and self-employed persons (Nordic health & welfare statistics, 2022).

Having pointed out how the benefits are in these Nordic countries; it is also important to highlight their variations in the level of compensation of benefits. The compensation level here means the amount of cash benefits transferred back to individuals who are unemployed and eligible for receiving unemployment benefits. The highest compensation levels shown in Table 1. are in Denmark and Sweden, whose compensation levels are 90% and 80% of previous earnings. However, in Finland and Norway, compensation levels are lower compared to Denmark and Sweden.

JOB-SEARCH MODELS OF UNEMPLOYMENT BENEFITS AND UNEMPLOYMENT DURATION

The job search models of unemployment benefits according to Mortensen (1977) indicates that unemployment benefits raise the reservation wage of the unemployed and therefore allows them to be selective with job offers which leads to longer unemployment spells. This version of the job-search model posits that unemployment benefits is studied using incentive effects. Here, the benefits act as an incentive for those who receive and can influence the time, they take to get a new job and the kind of job they decide to take.

In the Job-search model, there is also a phenomenon whereby relatively generous unemployment benefits can also prompt people to seek employment and participate in the labour market in order to qualify for the benefits (Sjoberg et.al, 2021). This phenomenon is referred to as the Entitlement effect. There is evidence for this entitlement effect in the United States where according to Moffitt (2014), people living in areas with higher unemployment benefits are more likely to take jobs that have earnings exceeding the minimum level required for benefits, on the other hand, people living in areas with lower unemployment benefits are more likely to take jobs with earnings below the eligibility level needed for the benefits.

The job-search theory demonstrates unemployment benefits as an incentive that can either prod people not to search for jobs or intensify their job search efforts. Thus, the theory is important for this study as it can help explain if the benefits in the Nordic countries has an incentive or entitlement effect when it comes to labour outcome of getting employed.

The job search theory has been reviewed empirically with several within-country studies concluding that there are significant effects of unemployment duration if the replacement rate and potential benefit duration change (Sjoberg et.al, 2021, Tatsiramos & Van Ours, 2014).

Also, in a comparative study of the Nordic countries between 1995 and 1996 on the influence of different compensation levels of unemployment benefits on job chances among unemployed youth, Hammer (1999) found a decrease in probability for unemployed youths receiving unemployment benefits even when controlling for age, education level and duration of unemployment. Hammer (1999) reports that this effect was stronger for Denmark which had compensation levels of up to 90 percent compared to the other Nordic countries with lower levels of compensation.

Additionally, in their study on the relationship between unemployment benefits and unemployment duration, Rotar and Krsnik (2020) examined different European countries,

discovering that the more generous an unemployment benefit is, the more likely unemployment duration will last for at least 12 months, especially in central and southern European countries. In Northern Europe which includes the Nordics, Rotar and Krsnik (2020) reported that cases of short term (less than a month) and long-term unemployment durations were statistically significant after receiving unemployment benefits. They explained that recipients of benefits most times wait for the benefits to expire before actively seeking for employment.

In research on basic income in Finland, it was discovered that giving a basic amount of cash to people led some to finding employment, however, a majority of people who were unemployed at the start of the basic income experiment were still unemployed by the time of its end (Kangas & Ylikanno, 2021).

Also, there are studies that show some positive association between benefits and employment. Tatsiramos (2009) concludes that although there is a negative impact of unemployment benefits on duration of unemployment, however, there is also a positive indirect effect on increased duration of subsequent employment. Tatsiramos (2009) reports that this effect is stronger in countries with relatively more generous benefits. This effect also applies to Denmark which is the only Nordic country included in his study.

Inanc and Kalleberg (2022) point out that previous research has shown that unemployment insurance which is also an indicator for measuring generosity of social welfare systems can but does not always protect against labor market insecurity. Inanc and Kalleberg (2022) also highlight that various European cross-national studies have shown that unemployment assistance, unemployment insurance and spending on passive labor market activities were negatively associated with perceived job insecurity.

Also, in the context of this study on unemployment benefits, it is important to also know that the study of welfare state has seen a paradigmatic shift from decommodification to social

investment (Kangas & Eronen, 2022). This means that welfare state policy and provisions such as unemployment benefits has gone from trying to shield people from social risks through compensations to trying to prevent the risk and enhance people's coping capacities. With this shift in policy in mind, there have been changes over the past years towards provisions like unemployment benefits and it also applies to Nordic countries who are the focus of this study.

From the literatures cited above, a recurring theme is that unemployment benefits lead to an increase in the duration of unemployment especially when the benefits are generous. This elongated duration of unemployment can be said to come about as benefits incentivize individuals to take time to find better job opportunities or maybe makes them not to be in a hurry to find employment. Also, there are literatures above that associate benefits with job security and ensuring longer periods of employment or rather stability in the next job. The literatures above use methodological approach of quantitative analysis of cross-sectional data, panel data and even experiments to come about its results and findings. However, in the context of this study focused on Nordic countries, there are several limitations and weaknesses present in the literatures above.

These limitations include the demographics used to represent the Nordics in some of the studies (Hammer, 1999) which focused only on youth and not the working population in order to for results to be generalizable to the Nordics. Also, the timeframe used for some of the studies were too little or have become far gone as regard measuring the association of benefits and labour outcomes in Nordic countries. Finally, most of the studies (Rotar and Krsnik, 2020; Sjoberg et.al, 2021; Tatsiramos, 2009; Tatsiramos & Van Ours, 2014) are generalized in a European context and thus results representing the Nordic social welfare model are drawn from maybe one or two of the Nordic states.

Now the contents of previous literature have pointed out that generous benefits sometimes do not lead to employment, especially in a general European context. The aim of this study is specifically how useful unemployment benefits are on labour outcomes in Nordic countries given welfare provisions moving from compensation to becoming social investments. Furthermore, the study aims to find if there is an association between benefits and people gaining employment or remaining unemployed in the Nordic countries.

RESEARCH QUESTION

The research questions to guide this study are below;

- 1) Are unemployment benefits associated with probability to be employed in Nordic countries?
- 2) Are unemployment benefits associated with duration of unemployment in Nordic countries?

DATA AND METHODS

The data used for this study is the Luxembourg Income Study (LIS) data. The Luxembourg income study data is well suited for this study because it is a cross-national data which is important for my analysis because it contains data on my countries of interest. The Luxembourg Income Study (LIS) data in general is composed of datasets which contains household and individual level data on labor income, pensions, public social benefits and private transfers, taxes, contributions, demography, employment and expenditures (Luxembourg Income Study, 2023). For this study, the 5th to 10th wave (1995 – 2016) of the Luxembourg Income Study data is used for my countries of analysis Finland, Denmark, Norway and Sweden.

The study focuses on individuals aged 20 to 65 years old in Finland, Denmark, Norway and Sweden and has a total observation of 4,485,451 individuals from the waves of the LIS data used.

The dependent variable for this study is the variable `emp` which is a dummy for employed or not. The variable `emp` (dummy for employed or not) is explained in the LIS database as being different from the Labor force status (LFS) variable which includes students, retired individuals, those out of work and caregivers. It is also does not include individuals (both men and women) who are on parental leave as they have their variable coded differently in the Luxembourg Income Study (LIS) data.

The main independent variable is `log_pi42` which is log unemployment benefits. Log unemployment benefits is generated from the variable of `pi42` (unemployment benefits) and it gives the log of unemployment benefits. It is coded from 1 to 13. These benefits include wage replacement benefits from unemployment insurance meant to compensate for partial or total loss of income, cash benefits from unemployment public programs aimed at targeting the entire

population or part of the population and cash benefits from unemployment social programs targeted at individuals in need (Luxembourg Income Study, 2023).

The reason for using log benefits here is that in the original variable there were negative values which were cases of individuals having to pay back the government. Also, the distribution of the variable was skewed. In this study, the variable was transformed to a log variable to include only those who receive benefits without conditions of paying back and to also have a normal distribution of values.

One of the control variables used in this study is the variable “Age”. For the variable age, those whose age were below 20 and above 65 were removed from the study. This was done to use the likely working population who are eligible to receive unemployment benefits and might have experienced unemployment. Another control variable I recoded is Marital status. Here, I created a dummy for those in marriage and partnerships to one group and those without partners, divorced and widowed in another group.

Other control variables included in this study include gender (dummy for male or female), highest education level, and weeks (annual weeks worked), year and country name.

The method of analysis for this study is logistic regression using average marginal effects. One of the major reasons and advantages for logistic regression is that in the social sciences, it is usually the preferred method when studying outcomes naturally or necessarily represented by binary variables (Mood, 2010). This method of analysis will be used to address the first research question on the association between unemployment benefits and the probability of being employed in Nordic countries. Also, the study will use the three-stepwise model of the logistic regression for its analysis and there are several reasons for this. First, this will allow the study to use relevant variables that have an impact on labour outcomes. Also, a stepwise model will help show the relationship between unemployment benefits and labour outcomes

while taking into account the influence of other relevant variables on labour outcomes. However, the control variables used will depend on their availability in the LIS data for all Nordic countries being observed. Also, in the logistic regression analysis, this study uses the mean-centered age in the model to control for age effects by holding age constant so that its effects don't come about due to differences in the age distribution of selected individuals.

Another method of analysis used is the survival analysis, which according to Clark et.al (2003) is explained as a set of statistical approaches used especially in the biological and medical sciences for data analysis where the outcome variable of interest is time until an event occurs. For this study, the event of interest is getting employed. The survival analysis will be used in this study to address the second research question on the association between unemployment benefits and duration of unemployment in Nordic countries.

RESULTS

1.1 DESCRIPTIVE STATISTICS

This section will describe the variables used in the model and how these variables are distributed.

Table 2. Descriptive Statistics of Dependent, Independent and Control Variables

Variable	Frequency	Percentage
Employed		
Not employed	1,889,421	48
Employed	2,048,958	52
Log Unemployment Benefits		
Min: 1 Max: 13	Mean: 10.05	Std: 1.54
Marital Status		
Married/in union	1,907,962	43
Not married	2,548,088	57
Gender		
Male	2,244,692	50.04
Female	2,240,759	49.96
Education Level		
Primary education	701,510	20
Secondary education	1,826,144	52
Tertiary education	970,715	28
Country		
Denmark	1,444,971	32
Finland	208,459	5
Norway	2,606,630	58
Sweden	225,391	5
Year		
1995	258,919	5.77
2000	271,518	6.05
2004	279,550	6.23
2007	711,085	16
2010	731,545	16.31

	2013	732,934	16.34
	2016	1,499,900	33.44
Age			
Min: 20	Max: 65	Mean: 42.32	Std: 12.87
Annual Weeks Worked			
Min: 4	Max: 52	Mean: 45.28	Std: 13.66
Total Observation (N)		4,485,451	

Std = Standard deviation

Table 2 above gives an overview of the variables used for this study. First, the dependent variable employed will be explained in brief. This variable shows those who are employed and unemployed from the period of analysis (5th wave to 10th wave) for the countries of interest in the LIS database. The share of employed individuals (52%) is higher compared to those who are unemployed. The main independent variable is log_pi42 which means the log of unemployment benefits paid. This variable has an average of 10 which shows that the countries used for the study paid a moderate amount towards unemployment benefits.

The other variables in Table 2 include marital status showing those who are married and unmarried. Also, the education level variable shows the highest level of education completed with individuals whose highest education completed being secondary having the largest share. The control variable gender shows the share of men and women included in this study. For the variable age, just as like it was mentioned in the previous section the age range starts from individuals aged 20 to 65 representing the working population age and the mean age here is 42.

1.2 LOGISTIC REGRESSION MODEL

Table 3. Parameter Estimates for the independent and control variables from Logistic Regression Model using average marginal effects (AME) on the probability of being employed

	(1) Model1	(2) Model2	(3) Model3
Log Unemployment benefits	-0.013*** (0.000)	-0.013*** (0.000)	-0.011*** (0.000)
Country name (Ref. Denmark)			
Finland	-0.042*** (0.001)	-0.054*** (0.001)	-0.037*** (0.001)
Norway	-0.019*** (0.001)	-0.031*** (0.001)	0.004*** (0.001)
Sweden	0.041*** (0.001)	0.038*** (0.001)	0.041*** (0.001)
Year (Ref. 1995)			
2000	0.008*** (0.002)	0.014*** (0.002)	-0.027*** (0.001)
2004	-0.009*** (0.002)	0.001 (0.002)	-0.044*** (0.001)
2007	0.008*** (0.001)	0.020*** (0.001)	-0.023*** (0.001)
2010	-0.009*** (0.001)	0.004** (0.001)	-0.042*** (0.001)
2013	0.014*** (0.001)	0.030*** (0.001)	-0.020*** (0.001)
2016	-0.032*** (0.001)	-0.013*** (0.001)	-0.067*** (0.001)
Gender (Ref. Male)			
Female	-0.065*** (0.001)	-0.072*** (0.001)	-0.083*** (0.001)
Mean Age	0.000***	0.002***	0.002***

	(0.000)	(0.000)	(0.000)
Marital Status (Ref. Married)			
Not Married		-0.141*** (0.001)	-0.128*** (0.001)
Education Level (Ref. Primary education)			
Secondary education			0.153*** (0.001)
Tertiary education			0.256*** (0.001)
Observations	2606876	2606876	2606876
Pseudo R-squared	0.015	0.033	0.064

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The coefficients (-0.013, -0.013, -0.011) in Table 3 show that in all three models, a unit increase in the amount of log unemployment benefits is associated with the probability of being unemployed when other variables of the model are controlled for. The coefficients are also statistically significant in all three models (Model1, Model2, Model3).

In the Nordic countries, compared to the country of reference Denmark, being in Finland in all three models is associated with a decrease in the probability of being employed and is statistically significant in all models. Compared to the reference category Denmark, being in Norway in the first two models (-0.019, -0.031) is associated with a decrease in the probability of being employed. However, in the third model with the addition of education level, being in Norway is positively associated with the probability of being employed. The coefficients are also statistically significant in all 3 models.

However, being in Sweden increases the probability of being employed by 4 percentage points which is similar in all models and statistically significant. Since the 4-percentage point difference remains the same regardless of the model, this can be interpreted to mean that marital

status and education level are not strong factors to explain labour outcomes in Sweden. Therefore, there might be other factors associated with residing in Sweden which increases the probability of being employed.

In the variable year, model 1 shows that there is a fluctuation in the probability of being employed. compared to the reference year 1995, these years (2000, 2007, 2013) were associated with an increase in the probability of being employed while the years (2004, 2010, 2016) were negatively associated with the probability of being employed. In model 2, there are also fluctuations in the probability of being employed where compared to the reference year 1995 every subsequent year (2000, 2004, 2007, 2010, 2013) is associated with an increase in the probability of being employed. In model 2, only the year 2016 is associated with a decrease in the probability of being employed.

In model 3, when education level is controlled for, all year's show a negative association with the probability of being employed. It can be interpreted here that if education would be same for all individuals, people would be less employed over the years. Thus, education plays a crucial role as people's employability is stratified by the level of education they have attained.

When it comes to gender, compared to men women in model 1 have 6.5 percentage points less probability to be employed which increases to 8.3 percentage points in model 3. This is statistically significant in all three models.

The mean age coefficients (0.000, 0.002, 0.002) show that in all 3 models, an increase in mean age is associated with a positive probability of getting employed with other variables controlled for. This is significant in all three models although the coefficient of the effect is small. This result indicates that on average, older individuals may have a higher probability of being employed when compared to younger individuals after controlling for other variables in the model.

The variable of marital status is introduced in the 2nd model and it shows that compared to married people, those who are unmarried have less probability of being employed. The coefficients in the third model are reduced by 1.3 percentage points when education level is added to the model. However, in both models, those who are unmarried have less probability of being employed compared to married people.

When compared to people with primary education, those with secondary and tertiary education have the probability of being employed by 15 and 25 percentage points respectively with other variables in the model controlled for. This is also statistically significant and deviation from other variables due to the clear positive effects it has on employment.

1.3 INTERACTIONS

This study will show the results of an interaction between the variable country and year. This interaction will include a model that doesn't control for log unemployment benefits and one that doesn't control for log unemployment benefits.

The interactions are carried out for the purpose of making out the employment share in the Nordic countries with and without log unemployment benefits. This is done to also the first research question on the association of unemployment benefits and the probability of being employed in the Nordic countries.

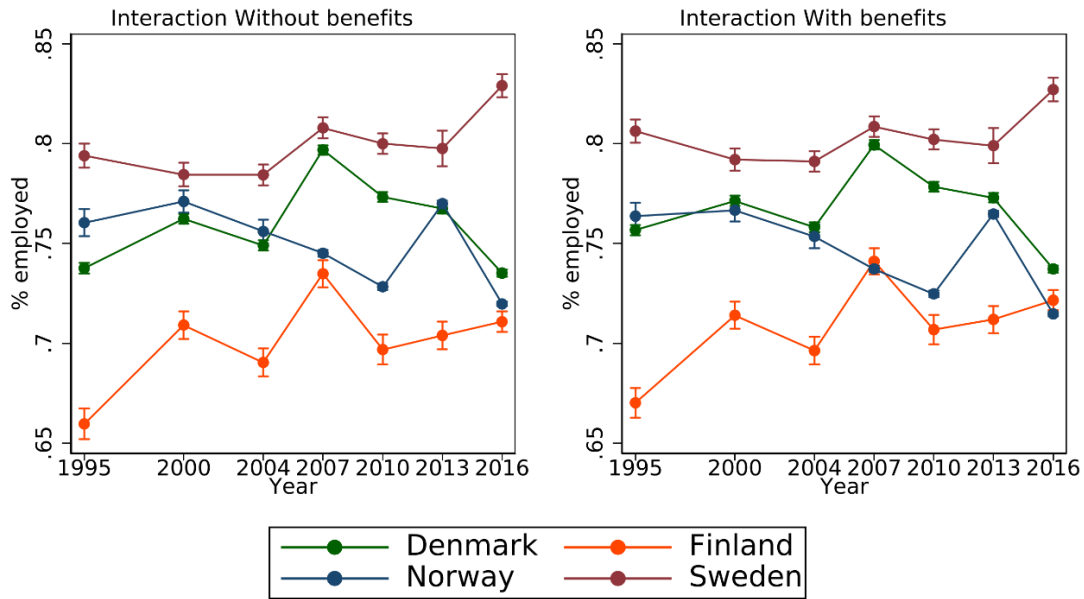


Figure 1: Interaction between the variables “country” and “year” using logistic regression estimation (with and without log unemployment benefits)

The interactions above show the employment rate in each Nordic country in every year of observation used in this study. The interaction shows an upward trend in the employment rate for Sweden both when benefits are controlled for and when they are not. Finland has an upward trend in employment but the rate is at a lower level compared to the other Nordic countries.

Denmark and Norway from the interaction have their employment rate reducing. The two countries do have years where there is a sharp increase in their employment rate (2007 for Denmark and 2013 for Norway).

However, the figure shows that unemployment benefits have little effect on the direction of employment in Nordic countries. This is because the interaction between country and year shows a similar direction in the rate of employment when log unemployment benefits are controlled for in the model and when it is not.

1.4 SURVIVAL ANALYSIS

In the survival curve figure below, the countries observed are Finland and Sweden. The reason for this is that they were the only countries that had the variable ‘weeks (annual weeks worked)’ available for the model.

From the output in Figure 2, the survival curves show that in 1995 unemployment benefits had no major effect on the duration of unemployment compared to the model without unemployment benefits.

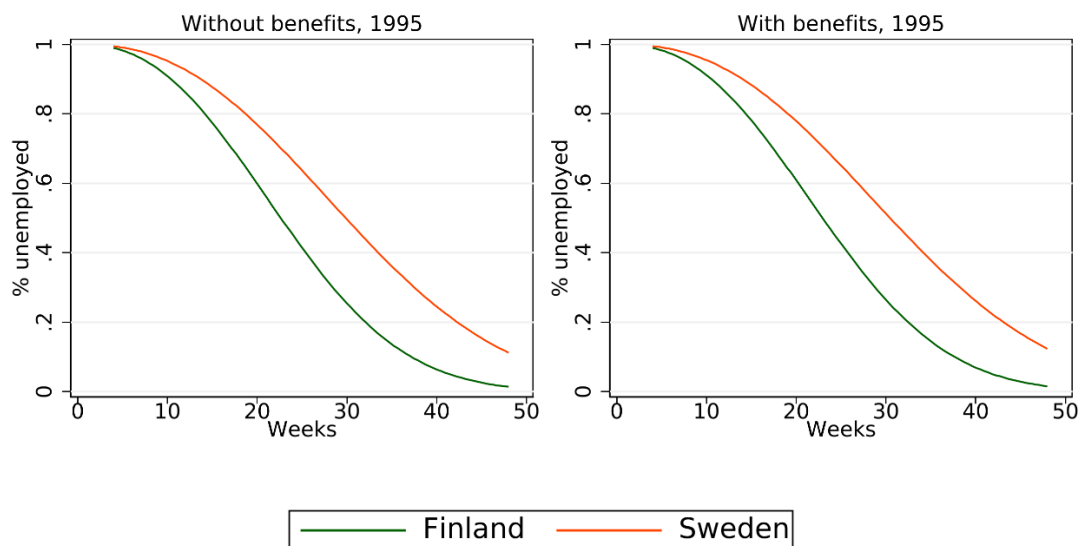


Figure 2: Survival analysis curves showing the duration before getting back to employment (with and without log unemployment benefits) in Finland and Sweden, 1995

In 2016, Figure 3 shows that there is a similar trend in the duration of unemployment even when unemployment benefits are included in the model and when it is not.

In Figure 3, after 10 weeks over 45% of individuals observed remain unemployed in Sweden, while less than 20% remain unemployed in Finland. This trend is the same when unemployment benefits are controlled for and when they are not.

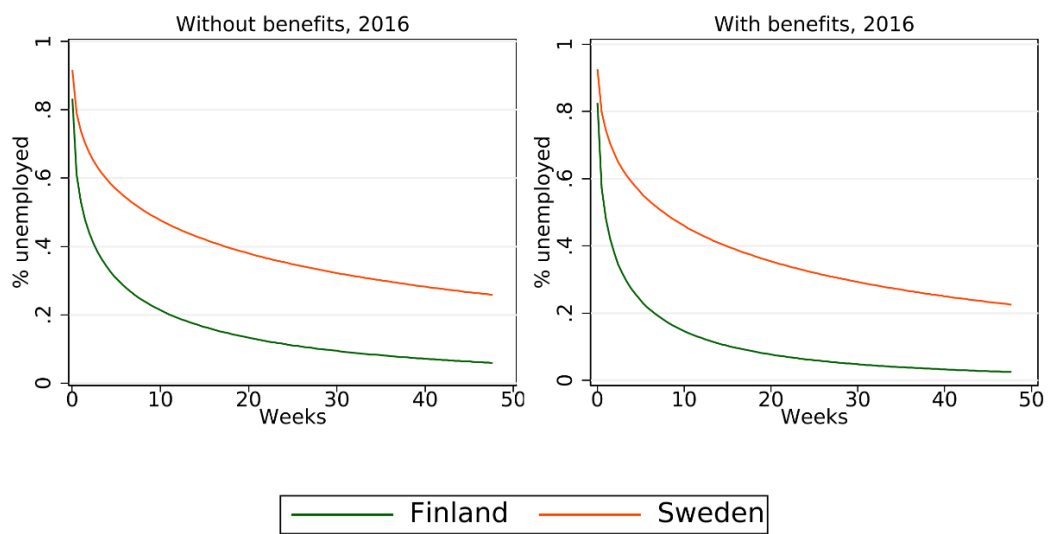


Figure 3: Survival analysis curves showing the duration before getting back to employment (with and without log unemployment benefits) in Finland and Sweden, 2016

DISCUSSION & CONCLUSION

This study set out to examine the usefulness of unemployment benefits on labour outcomes in Nordic countries. The results from the logistic regression carried out for the study show that an increase in the amount of log benefits received is associated with the probability of being unemployed. Though the effect is small, the result is consistent with some of the literature (Hammer, 1999; Rotar and Krsnik 2020) cited in this study that generous unemployment benefits lead to longer spells of unemployment. Rotar and Krsnik (2020) explained that individuals who receive benefits most times wait for the benefits to expire before actively seeking employment. The implication here is that with the average of the log benefits for the Nordic countries being 10, it means that within the Nordic countries, most who receive unemployment benefits have the probability of not being employed for a considerable amount of time. This addresses the first research question and shows that unemployment benefits are not associated with the probability of being employed in the Nordics while keeping in mind that the effect of its association with being unemployed is not strong.

Also, the results showed a variation in the direction of employment within the Nordic countries. In the logistic regression estimates, Sweden was the only Nordic country that had a positive probability for employment. Nonetheless, it is still important to point out that the interaction results show that the employment rate in the Nordics is quite high but only Sweden and Finland have an upward trend. This might be linked to the incentive and entitlement effect of the job-search models when looking at the compensation level and coverage period of unemployment benefits/insurance in the Nordics. The entitlement effect of the job-search models according to Sjoberg et.al (2021) is a phenomenon whereby relatively generous unemployment benefits can also prompt people to seek employment and participate in the labour market to qualify for the benefits. Sweden and Finland when compared to the other Nordic countries has the lowest coverage period for benefits at 11 and 18 months respectively (Frelle-Petersen et.al, 2020).

This factor coupled with the fact that Sweden's labour market policy is focused on the salability of employment (Furkaer et.al, 1990) might explain why there is such an uptick in the employment rate of Sweden in comparison to the other Nordic countries.

The other variables in the logistic regression model also tell different stories with the results they put out. When it comes to employment, women in the Nordics have less probability to be employed when all other variables are controlled for. Also, when looking at the mean age, an increase in mean age is associated with the probability of being employed when other variables are controlled for. This means on average; an older person is more likely to be employed compared to younger people. The logistic regression also showed that single people have less probability of being employed when compared to people who are married. The different story in the model comes with the variable of education level, here the higher the level of education, the more likely the probability to be employed compared to those with lower education.

The survival analysis results also give a similar result according to other literature that generous unemployment benefits lead to a longer duration of unemployment (Hammer, 1999; Rotar and Krsnik, 2020). The countries used in the survival analysis test were Finland and Sweden. However, in the two years (1995 and 2016) where the survival test models were tested when controlling for unemployment benefits and without unemployment benefits, there was no major effect on the duration of unemployment in those years. However, an insight was given between the two countries used for the survival analysis and it showed that people in Finland got back into employment faster than those in Sweden even when unemployment benefits are controlled for in the survival analysis model.

The result of the survival analysis model can also be explained through the incentive and entitlement effect of the job search models especially when looking back at the unemployment insurance/benefits compensation levels of Finland and Sweden. Sweden has a more generous

compensation level with compensations as high as 80% of the previous salary while Finland has its own compensation between 48% to 69% of previous income (Deloitte, 2020). Now, the incentive effects of the job-search models explain unemployment benefits as acting as an incentive for those who receive it and can influence the time, they take to get a new job and the kind of job they decide to take. The entitlement effect on the other hand with an example of evidence from Moffitt (2014) shows that people who live in areas with lower unemployment benefits are more likely to take jobs with earnings below the level needed for eligibility for the benefits. Now, having in mind that Finland has lower compensation levels when compared to Sweden, it might be the case that recipients of benefits in Finland might be more willing to take jobs with lower earnings which makes them get back into employment faster than those in Sweden where the compensation is a bit higher.

The results from this study are in a way consistent with some of the other literature (Hammer, 1999; Kangas & Ylikanno, 2021; Rotar and Krsnik 2020 & Tatsiramos, 2009) that conclude that generous benefits lead to longer unemployment durations and that recipients of benefits might take a bit longer before going back into employment. The Nordic countries in the beginning of this study were explained to have a welfare state provisions which are quite similar and led to them being grouped under the Nordic welfare model or Scandinavian social democratic model by Esping-Andersen. One of the key features established about the Nordic welfare state was its high employment rates and active labor market policies (Kuisma and Nygard, 2015). Therefore, with these features in mind it is quite clear that the welfare regimes in the Nordics take employment seriously and therefore might explain why unemployment benefits from this study's result has no visible effect on probability of being employed.

The summary of this study is that unemployment benefits does not explain the labour outcome of employment in the Nordics and there might be other socio-economic factors that explains employment better. However, unemployment benefits in Nordic countries can also explain

unemployment because of the attitudes the benefits and its requirements make recipients exhibit. In this case generous benefits and longer coverage period might lead to extended periods of unemployment whereby shorter coverage periods might spur recipients to take any available jobs.

This study admittedly has some challenges which needs to be addressed in order to put the results of the study in more context. First, the nature of the data source which is the Luxembourg Income Study (LIS) made it difficult to include some socio-economic variables such as health, citizenship and immigration status. Since there was a lack of consistency in some of the countries regarding these variables they could not be included in the study. This is important because it would have been beneficial to see the effect of benefits on immigrants and non-citizens when compared to citizens of the Nordic countries to know if the effect is different for the two groups.

Also, another challenge faced by this study goes back again to the data and this time the survival analysis test carried out in the study. There were only two countries available for model and it can be really difficult to make inferences from the survival analysis test for Denmark and Norway who didn't have data available for the test. This is also a major shortcoming.

Also, in view of the shortcomings of this study especially as regards to unavailability of data, it is recommended that in order to have clearer answers on the usefulness of unemployment benefits to labour outcomes in the Nordic countries, a longitudinal study following up on individuals who receive benefits in the Nordic countries should be conducted. This will give a lot more clearer answers and inference as regards the actual effect of benefits on labour outcomes and other socio-economic indices of individuals who receive unemployment benefits in the Nordic countries.

The results of this study give an important insight into unemployment benefits to policymakers within Nordic countries. Those who make policy have to ensure that unemployment benefits are designed to correspond with the social investment goal of modern welfare states and to make clear if the target of the benefits are for immediate reentry into the labour market or the preparation of recipients into more stable employment in the long term.

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APPENDIX A:

Interaction model between the variables “country” and “year” using logistic regression estimation (model without log unemployment benefits)

Iteration 0: log likelihood = -1479556.6

Iteration 1: log likelihood = -1430809.3

Iteration 2: log likelihood = -1430150.2

Iteration 3: log likelihood = -1430150

Iteration 4: log likelihood = -1430150

Logistic regression	Number of obs	= 2,606,876
	LR chi2(31)	= 98813.13
	Prob > chi2	= 0.0000
Log likelihood = -1430150	Pseudo R2	= 0.0334

emp	Coef.	Std. Err.	z	P>z	[95% conf. Interval]	
Country name (Ref. Denmark)						
Finland	-0.3833152	0.0192988	-19.86	0.000	-0.42114	-0.3454903
Norway	0.1250095	0.0209107	5.98	0.000	0.0840253	0.1659936
Sweden	0.3237939	0.0203953	15.88	0.000	0.2838198	0.363768
Year (Ref. 1995)						
2000	0.1355716	0.0102549	13.22	0.000	0.1154722	0.1556709
2004	0.061426	0.010136	6.06	0.000	0.0415597	0.0812922
2007	0.3421165	0.0105041	32.57	0.000	0.3215288	0.3627042
2010	0.198423	0.0103203	19.23	0.000	0.1781956	0.2186504
2013	0.1648689	0.0102565	16.07	0.000	0.1447665	0.1849714
2016	-0.0128499	0.0086778	-1.48	0.139	-0.029858	0.0041583
Gender (Ref. male)						
Woman	-0.3865831	0.0029021	-133.21	0.000	-0.392271	-0.3808951
Age	-0.0113032	0.0001249	-90.46	0.000	-0.0115481	-0.0110583
Marital_status (Ref. married)						
not married	-0.7575076	0.0032939	-229.97	0.000	-0.7639636	-0.7510517

Country#Year						
Finland#2000	0.1012564	0.0271378	3.73	0.000	0.0480673	0.1544455
Finland#2004	0.0834208	0.0267425	3.12	0.002	0.0310066	0.1358351
Finland#2007	0.0264715	0.0275932	0.96	0.337	-0.0276102	0.0805533
Finland#2010	-0.0222463	0.0279238	-0.8	0.426	-0.076976	0.0324834
Finland#2013	0.0459982	0.027074	1.7	0.089	-0.0070658	0.0990623
Finland#2016	0.2579383	0.023838	10.82	0.000	0.2112167	0.3046599
Norway#2000	-0.0749109	0.0276483	-2.71	0.007	-0.1291005	-0.0207213
Norway#2004	-0.0863784	0.0277489	-3.11	0.002	-0.1407651	-0.0319916
Norway#2007	-0.426977	0.0227186	-18.79	0.000	-0.4715046	-0.3824494
Norway#2010	-0.3722223	0.0225853	-16.48	0.000	-0.4164887	-0.3279558
Norway#2013	-0.1106703	0.0225907	-4.9	0.000	-0.1549473	-0.0663932
Norway#2016	-0.2053464	0.0216593	-9.48	0.000	-0.2477977	-0.162895
Sweden#2000	-0.1936703	0.02817	-6.88	0.000	-0.2488824	-0.1384581
Sweden#2004	-0.120506	0.0270528	-4.45	0.000	-0.1735284	-0.0674835
Sweden#2007	-0.2526307	0.0279234	-9.05	0.000	-0.3073596	-0.1979018
Sweden#2010	-0.1604115	0.0273345	-5.87	0.000	-0.2139861	-0.1068368
Sweden#2013	-0.1419449	0.0359	-3.95	0.000	-0.2123077	-0.0715821
Sweden#2016	0.248165	0.029936	8.29	0.000	0.1894916	0.3068384
_cons	2.079413	0.0096131	216.31	0.000	2.060571	2.098254

APPENDIX B:

Interaction model between the variables “country” and “year” using logistic regression estimation (model with log unemployment benefits)

Iteration 0: log likelihood = -1479556.6

Iteration 1: log likelihood = -1430809.3

Iteration 2: log likelihood = -1430150.2

Iteration 3: log likelihood = -1430150

Iteration 4: log likelihood = -1430150

Logistic regression	Number of obs	= 2,606,876
	LR chi2(31)	= 98813.13
	Prob > chi2	= 0.0000
Log likelihood = -1430150	Pseudo R2	= 0.0334

emp	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
Log Unemployment Benefits	-0.0696705	0.0004698	-148.29	0.000	-0.0705913	-0.0687496
Country name (Ref. Denmark)						
Finland	-0.4426495	0.0194417	-22.77	0.000	-0.4807545	-0.4045444
Norway	0.0397822	0.0210485	1.89	0.059	-0.0014722	0.0810366
Sweden	0.301509	0.0205621	14.66	0.000	0.261208	0.34181
Year (Ref. 1995)						
2000	0.0843055	0.0103532	8.14	0.000	0.0640135	0.1045975
2004	0.0081384	0.0102353	0.8	0.427	-0.0119225	0.0281992
2007	0.2563698	0.010603	24.18	0.000	0.2355882	0.2771513
2010	0.126032	0.0104162	12.1	0.000	0.1056167	0.1464474
2013	0.0934872	0.0103567	9.03	0.000	0.0731886	0.1137859
2016	-0.1069646	0.0087835	-12.18	0.000	-0.12418	-0.0897492
Gender (Ref. male)						
Woman	-0.3919052	0.0029164	-134.38	0.000	-0.3976212	-0.3861891
Age	-0.0123022	0.0001258	-97.81	0.000	-0.0125488	-0.0120557

Marital_status (Ref. married)						
not married	-0.7551205	0.0033055	-228.44	0.000	-0.7615992	-0.7486419
Country#Year						
Finland#2000	0.1301998	0.0273206	4.77	0.000	0.0766524	0.1837473
Finland#2004	0.1177726	0.0269292	4.37	0.000	0.0649923	0.1705529
Finland#2007	0.100011	0.0277884	3.6	0.000	0.0455467	0.1544753
Finland#2010	0.0519362	0.0281245	1.85	0.065	-0.0031867	0.1070592
Finland#2013	0.110236	0.0272637	4.04	0.000	0.0568002	0.1636719
Finland#2016	0.3600959	0.02402	14.99	0.000	0.3130176	0.4071743
Norway#2000	-0.0673359	0.0277897	-2.42	0.015	-0.1218027	-0.0128692
Norway#2004	-0.0657309	0.0279034	-2.36	0.018	-0.1204205	-0.0110412
Norway#2007	-0.4030212	0.0228533	-17.64	0.000	-0.4478129	-0.3582295
Norway#2010	-0.3386796	0.0227225	-14.91	0.000	-0.3832149	-0.2941442
Norway#2013	-0.0874516	0.0227287	-3.85	0.000	-0.1319991	-0.0429042
Norway#2016	-0.1577032	0.0217939	-7.24	0.000	-0.2004185	-0.1149878
Sweden#2000	-0.1761724	0.0283966	-6.2	0.000	-0.2318287	-0.1205161
Sweden#2004	-0.105788	0.0272656	-3.88	0.000	-0.1592275	-0.0523484
Sweden#2007	-0.2411169	0.0281131	-8.58	0.000	-0.2962176	-0.1860162
Sweden#2010	-0.1532282	0.0275321	-5.57	0.000	-0.20719	-0.0992663
Sweden#2013	-0.1409159	0.0361287	-3.9	0.000	-0.2117268	-0.0701049
Sweden#2016	0.2504963	0.0301162	8.32	0.000	0.1914697	0.3095228
_cons	2.296557	0.0098272	233.69	0.000	2.277296	2.315818