



TOWARD A MORE INCLUSIVE LABOUR MARKET IN THE NORDICS 3

A Multitude of Barriers:

analysing components in joblessness to inform
policy in the Nordic countries



**Nordic Council
of Ministers**

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1. Executive summary

The Nordic Council of Ministers aims to make the Nordic region the most socially sustainable and competitive region in the world by, among other things, improving the employment prospects of vulnerable groups in the entire region. This is essential for a well-functioning labour market and the socio-economic well-being of individuals (The Nordic Council of Ministers, 2022). To achieve this goal, a stronger knowledge base is needed to understand the employment barriers faced by vulnerable groups and how to overcome them.

This report is the third in a large research project examining *how to increase labour market participation among vulnerable groups in the Nordic countries*. In the first report, we shed light on the labour force participation among vulnerable groups in the Nordic countries. In the second report, we developed a framework over employment barriers in the Nordic countries affecting the employment chances of vulnerable groups. The framework covers 24 specific employment barriers relating to either individual characteristics, economic incentives and motivation, the employer and labour market structures, or public services. The purpose of this third report is to deepen our understanding of the prevalence and combination of these employment barriers among individuals with no or weak labour market attachment in the Nordic countries. Furthermore, we seek to categorise these individuals based on the specific employment barriers they face.

First, we use our developed framework over employment barriers in the Nordic countries. By utilising microdata from Eurostat, we operationalise 10 employment barriers which relate to 9 out of the 24 employment barriers identified in the second report, making it possible to observe these barriers in data.

Second, we focus on individuals with no or weak labour market attachment and investigate the prevalence of the operationalised barriers, determine the typical number of barriers that individuals face, and identify the most common combinations of barriers. About 21 pct. of the working-age population in the Nordic countries (excluding students and individuals enrolled in compulsory military service) have no or weak labour market attachment.

Finally, we employ a statistical segmentation method (latent class analysis or LCA) to group individuals based on the barriers they encounter rather than solely relying on their observable demographic characteristics, such as age, country of origin, and health status. We call the subgroups, derived from the latent class analysis, data-driven target groups as counterpart to the traditional target groups for labour market interventions (young people, seniors, immigrants, and persons with disabilities).

Individuals with no or weak labour market attachment typically face a complex set of barriers

During previous phases of this project, we observed indications that individuals outside the labour market often face several barriers that hinder their participation on the labour market. However, these were only preliminary indications. With this report, we are now able to confirm that two-thirds of individuals with no or weak labour market attachment in the Nordic countries face at least two barriers. Further, we show that 14 pct. of the individuals face at least four barriers, and a common set of barriers prevalent among this subgroup comprises health issues, lack of education, no recent experience, and lack of skills. The simultaneous presence of these barriers amplifies the complexity of the task at hand, making it clear that a multifaceted approach is required to effectively assist these individuals in entering the labour market. Moreover, these results are most likely bottom-edge estimates of the barrier complexity in the Nordic countries since we are only able to operationalise 10 employment barriers related to 9 out of 24 employment barriers, as identified in previous work in this project.

We identify 8 distinct data-driven target groups that share similar employment barriers

We use latent class analysis (LCA) to separate the highly heterogeneous population of individuals with no or weak labour market attachment in the Nordic countries into 8 distinct subgroups that are close to homogeneous with respect to the types of employment barriers they face. These 8 distinct data-driven target groups are shown in Table 1.1. The model identifies an overall distinction between individuals who have no recent labour market experience and individuals who have recent labour market experience. Basically, the model sorts the individuals into 5 groups who, to a large degree, have no recent experience and 3 groups of individuals who to a larger degree, have recent labour market experience. Further, the table shows the primary and secondary barriers that identify the group, the size of the group, as well as a short description of the group.

Table 1.1 Summary of the latent class analysis: the 8 data-driven target groups

	GROUP	PRIMARY BARRIER	SECONDARY BARRIER	SHARE, PCT.	SHORT DESCRIPTION
No recent experience in the labour market	1	Never worked		6	A relatively small group of individuals who face three employment barriers on average. The group consists of a relatively large share of young people, women, and immigrants from non-EU countries.
	2	Never worked	Lack of education	5	The primary employment barriers for this group are no work experience and lack of education. The individuals in the group face four employment barriers on average, and many of the individuals are young and from (other) EU and non-EU countries.
	3	Health issues	Lack of education	21	This group consists of more than one-fifth of the individuals with no or weak labour market attachment in the Nordic countries. The most important barriers for this group are health issues and lack of competence-giving education. Further, the group consists of a relatively large share of women.
	4	Health issues	Low contact with PES	4	This group, like Group 3, has health issues as the primary barrier. However, unlike Group 3, the secondary barrier is their low contact with the public employment services (PES). Further, this group consists of a high share of seniors.
	5	Low job opportunities	High earnings replacement (benefits)	2	A small group consisting of individuals whose leading employment barriers are low job opportunities in the relevant labour market segment and a lack of incentives to work due to high benefits. The group consists of a relatively large share of women.
Recent experience in the labour market	6	Lack of education	Lack of skills	11	The ruling barriers for this group are lack of education and lack of skills, and the group comprises a relatively large share of individuals born in non-EU countries who face two employment barriers on average.
	7	Low contact with PES		19	Another large data-driven target group, whose primary barrier is a lack of contact with the public employment services. The group consists of a large share of seniors, and they face one employment barrier on average.
	8	(Temporarily out of work)		33	This is the largest group among the 8 data-driven target groups, and it consists of individuals who are relatively close to the labour market and, hence, can be considered temporarily out of work. The individuals in the group face one employment barrier on average.

The results shown in Table 1.1 contribute to highlight important sets of barriers that individuals with no or weak labour market attachment face in the Nordic countries. The data-driven target groups, each of which are close to homogeneous in terms of employment barriers, could be used to facilitate discussions of the strengths and limitations of different policy interventions for concrete groups of policy clients. They can also be used to help inform decisions on whether to channel additional efforts towards specific priority groups.

Traditional demographic target groups share common barriers, challenging their distinct categorisation

The LCA reveals another significant finding: the traditional demographic target groups cannot be neatly categorised into the 8 groups. In other words, not all young people exclusively belong to Group 1, nor do all seniors exclusively fall into Group 2, and so on. This suggests that the traditional demographic target groups do not uniformly face the same barriers. Instead, these barriers are shared across different traditional demographic groups. Consequently, relying solely on traditional demographic characteristics for precise targeting has its limitations. Nevertheless, despite the variations within the groups, there are certain primary demographic characteristics that partially define the data-driven target groups. These primary demographic characteristics are highlighted in the description of the group. By considering these primary demographic features, a more nuanced understanding of the target audience can be attained, leading to more effective strategies and tailored approaches. For instance, Group 1 and Group 6 consist of relatively high shares of immigrants from non-EU countries. However, it is crucial to recognise that these immigrants face distinct employment challenges. Group 1's primary barrier is the lack of prior experience in the labour market, whereas Group 6's primary challenge stems from an absence of competence-giving education and a lack of skills. Acknowledging these differences within the traditional demographic target groups is essential for shaping future employment policies.

Future use of results

These empirical findings demonstrate that future policies may derive greater benefits by focusing on the specific employment barriers faced by individuals, as indicated by the 8 data-driven target groups, rather than relying on broad demographic categories as a shorthand for the unique challenges experienced by individuals with no or weak labour market attachment. For instance, young people and seniors are often used as proxy groupings in policy discussions, assuming that these categories effectively capture distinct sets of employment barriers that can inform policy formulation and implementation (Fernandez et al., 2016). However, it is important to note that being young or being a senior, in and of itself, does not constitute an employment barrier.

When formulating future employment policies in the Nordic countries, it is crucial to consider the identified data-driven target groups. This analysis demonstrates that paying particular attention to the central distinction between individuals with recent labour market experience and those without is vital. Furthermore, recognising the significant group of individuals temporarily out of the labour market, who typically face only one employment barrier (Group 8), is essential. Early identification of this group should be prioritised when designing new policy initiatives. Lastly, it is important to recognise the existence of individuals with more complex sets of barriers, such as those who have never worked (Group 1) or those who lack both work experience and education (Group 2). On average, individuals in these groups face three and four employment barriers, respectively.

Nevertheless, it is essential to acknowledge that the traditional demographic target groups cannot be entirely disregarded, especially when addressing certain barriers. For instance, policy actions aimed at addressing the lack of education among young people will differ from those aimed at addressing lack of education among seniors. Therefore, a nuanced approach that considers both the specific employment barriers identified through data analysis and the relevant demographic characteristics is crucial for effective policy design and implementation.

This is invaluable information in future phases of this project when we will assess how current activation and labour support policies in the Nordic countries adequately support the identified groups of individuals as well as the traditional data-driven target groups. This evaluation will be achieved through a combination of extensive literature reviews and qualitative research, including interviews with relevant practitioners, with the ultimate aim of presenting concrete evidence-based policy recommendations to enhance labour force participation and inclusion among vulnerable groups in the Nordic countries.

2. Methodology

In this chapter, we present the overall methodology we use to investigate the prevalence and combination of employment barriers that individuals with no or weak labour market attachment face, as well as how we group these individuals based on the employment barriers they face. First, we describe the data we have used. Second, we describe how we have used the data to form the population of interest. Third, we briefly use our developed framework over employment barriers in the Nordic countries as a point of departure to describe how we understand employment barriers and how we operationalise them in data^[1]. Lastly, we describe the statistical method that we will use to group individuals with similar sets of barriers.

2.1 Data

In this study, we aim to assess the potential effectiveness of shifting the focus in employment policies within the Nordic countries from traditional demographic target groups to more directly addressing employment barriers. To examine this, we utilise microdata from Eurostat, specifically Eurostat's Statistics on Income and Living Conditions (SILC). EU-SILC provides a comprehensive data set containing variables related to various household information, such as income, labour market attachment, and number of children in the household. By analysing this rich data set, we aim to assess the viability of emphasising employment barriers as a fruitful approach in shaping employment policies.

1. See <https://www.norden.org/en/publication/barriers-employment-vulnerable-groups-nordic-countries>

Statistics on Income and Living Conditions (SILC)

The EU statistics on income and living conditions (SILC) is a household and individual data collection, and its aim is to collect timely and comparable cross-sectional and longitudinal data on income, poverty, social exclusion, and living conditions, among other things.

We use the most recent available EU-SILC from the Nordic countries. Unfortunately, there is some discrepancy as to which years are the most recent across the Nordic countries. The latest available data on Sweden, Finland, and Denmark are from 2021, the latest data on Norway are from 2020, and the latest data on Iceland are from 2018.

The EU-SILC in the Nordic countries uses a selected respondent model and interviews only one person per household. The selected respondent is asked personal questions, along with questions related to the household and labour market status for all household members. However, some questions are of such a sensitive nature that we cannot expect the selected respondent to answer on behalf of someone else; therefore, certain data on the other members of the household are missing. For example, questions related to health issues are only answered by the selected respondent. As a result, we use only the selected respondent in this analysis.

In the data, a distinction is made between the reference year and the moment of the interview. The former captures the labour market status in each month during the year, whereas the latter captures the labour market status at the moment of the interview, which is typically conducted 1–2 months after the survey year. Information regarding the reference year and the moment of the interview is used when we define the population of interest as well as employment barriers.

Data limitations

EU-SILC provides a rich data source that allows for cross-country comparison. There are, however, some issues regarding data limitations that deserve to be mentioned. First, EU-SILC is mainly a survey-based data source, which is enriched with administrative register data regarding, e.g., highest attained education among the members in the household. That it is survey-based means that it contains information about individuals' own perception of their health and their current economic status. This should be kept in mind throughout the report. Further, a common issue regarding survey data relates to how many households that are randomly selected and which decide to participate. For example, in Denmark, the response rate is about 40 pct. This leaves a risk of bias, as certain groups have lower response rates than others. The survey is calibrated to match the population on age and income, but there may still be an underrepresentation among some groups. For example, this report mainly concerns persons with no or weak labour market attachment. If the weakest individuals in this group either are not able to or decide not to participate to the same extent as stronger individuals in the group, the latter will be overrepresented, which can create a bias towards stronger individuals with no or weak labour market attachment. That said, it is important to stress that the data are calibrated to avoid these issues, and EU-SILC is a widely recognised data source used in the whole EU.

Second, we have been provided with the most recent EU-SILC from Eurostat. Unfortunately, the most recent EU-SILC data from Iceland are from 2018, and the most recent data from Norway are from 2020. In comparison, the data from Sweden, Denmark, and Finland are from 2021. This temporal disparity is a crucial factor to consider when making comparisons across countries, particularly when assessing variables sensitive to economic cycles (e.g., the number of individuals with no or weak labour market attachment). On the other hand, as we demonstrated in the first report in this project, the five countries are seldom on the same path regarding these economic cycles, meaning that comparisons of the fractions of individuals with no or weak labour market attachment across the five countries in 2021 will also be affected by economic cycles (Højbjerg et al., 2022). Additionally, it is worth noting that the Nordic countries experienced varying economic impacts during the Covid-19 pandemic, including repatriations and layoffs. These external factors should be considered when analysing labour market attachment. However, it is also important to recognise that the most vulnerable individuals, such as the long-term unemployed, may be less affected by the Covid-19 pandemic in terms of labour market attachment.

2.2 Individuals with no or weak labour market attachment

The population of interest in this study is individuals with potential labour market difficulties. This population can be divided into two subgroups. The first group consists of individuals in the working-age population (aged 18–64 and not enrolled in education or compulsory military service) who report no employment activity.

The second group consists of individuals who report employment activity but have a weak labour market attachment (also referred to as precarious employment). This group consists of individuals who report employment activity but are employed in a) unstable jobs, b) work few hours, or c) have a relatively low labour income (see the box below for further description).

Notice that we do not distinguish between voluntary and involuntary unemployment/underemployment even though some EU-SILC surveys ask respondents who report no employment activity whether they want to work. However, the respondents saying that they do not want employment or prefer to work part-time may do so because they face a specific employment barrier. For example, individuals with care obligations may report that they do not want to work because they have to take care of their child (and public arrangement may not suffice). Similarly, individuals with health issues may report that they do not want to work since they experience difficulties accessing jobs in the regular workplace. Common for these two examples is that policies, to some degree, can address both issues. Therefore, excluding these individuals would create a blind spot in this analysis, potentially also in future employment-oriented policies.

Definition of individuals with no or weak labour market attachment

Individuals who are out of work:

Individuals who do not report any employment activity at the moment of the interview and who have neither worked full-time nor part-time in any month in the reference year.

Individuals with weak labour market attachment:

a. Individuals in unstable employment

To define individuals in unstable employment, we follow Fernandez et al. (2016) and use the number of months worked during the year as an indicator of the individuals' work intensity. Individuals who have a work intensity above zero but not more than 45 pct. are considered to be in unstable employment. To exploit the richness of EU-SILC, we also characterise individuals with a work intensity equal to zero but who report employment activity at the moment of the interview as individuals in unstable employment.

b. Individuals working few hours

Individuals who spent most or all of the year working not more than 20 hours a week are considered individuals working few hours.

c. Individuals who report that they work but have a relatively low labour income

The reason for including these individuals in the weak labour market attachment group is two-fold. First, such situations can signal potential labour market difficulties (e.g., underpayment and/or informal activities). Second, identifying individuals with no or weak labour market attachment on the basis of self-reported activity status can be subject to errors of measurement or classification. Therefore, we follow OECD (2016) and include individuals whose income from the labour market is below the 5th percentile in the respective country in the group of individuals with weak labour market attachment. In other words, these individuals belong to the 5 pct. with the lowest salary in the respective country.

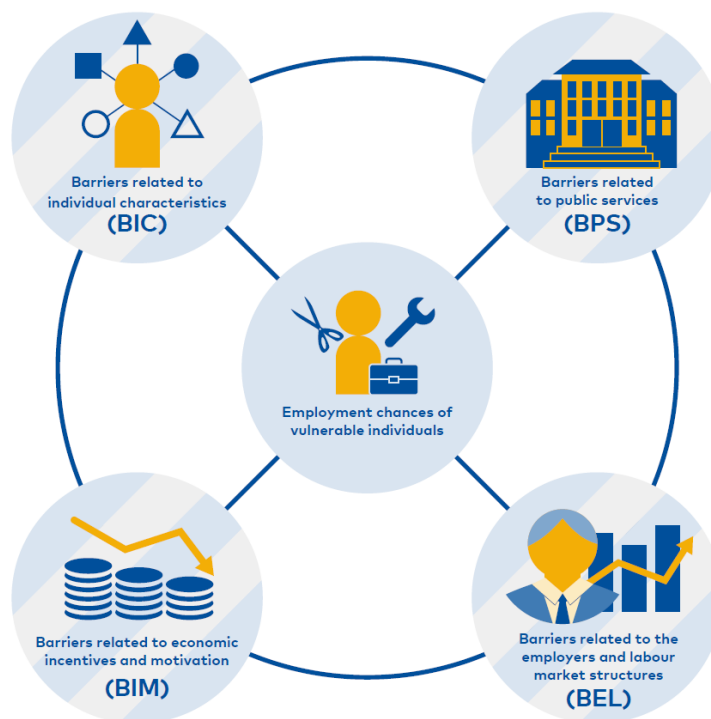
2.3 Indicators of employment barriers

Working-age individuals with no or weak labour market attachment may face a number of employment barriers that prevent them from participating in the Nordic labour markets. Fully understanding these barriers is an important first step in designing and implementing effective policy interventions.

Previously in this project, we developed a framework over employment barriers in the Nordic countries containing 24 specific employment barriers relating to either individual characteristics (BIC), economic incentives and motivation (BIM), the employer and labour market structures (BEL), or public services (BPS). The framework is presented in Figure 2.1.

We use EU-SILC to construct a set of empirical indicators of the employment barriers. As we present the indicators, one issue will quickly be apparent: the fact that it is not possible to construct empirical indicators for all the employment barriers in the framework. In fact, we have been able to identify 10 employment barriers which relate to 9 out of the 24 employment barriers. The operationalisation of the employment barriers is briefly described in the box below. For further description, see Appendix A.

Figure 2.1 Framework over employment barriers for vulnerable groups in the Nordic countries.



BIC

BIC₁: Mental health issues
 BIC₂: Physical health issues
 BIC₃: Lack of relevant education
 BIC₄: Joint retirement
 BIC₅: Lack of language skills
 BIC₆: Lack of knowledge about the labour market
 BIC₇: Lack of work experience and skills
 BIC₈: Care responsibilities

BPS

BPS₁: Low effectiveness of public services
 BPS₂: Collision between public services
 BPS₃: Lack of participation in public employment services
 BPS₄: Insufficient support for groups to overcome other barriers
 BPS₅: Lack of resources
 BPS₆: Regional differences in service provision and access to services

BIM

BIM₁: Insufficient economic incentive to find education/ employment
 BIM₂: Retirement and pension benefits, incl. early retirement and sick pay
 BIM₃: Mismatch between job content and personal values
 BIM₄: Lack of motivation

BEL

BEL₁: Costs associated with low productivity
 BEL₂: Information gaps and risks related to hiring employees
 BEL₃: Discrimination
 BEL₄: Working conditions
 BEL₅: Lack of local employment opportunities
 BEL₆: State of the economy

Note: This framework over employment barriers for vulnerable groups in the Nordic countries is based on an extensive literature review conducted by a panel of Nordic experts who all possess extensive knowledge on vulnerable groups and the barriers that these groups face.

Source: Højbjerg et al. (2023).

Indicators of employment barriers

To facilitate the clustering of jobless individuals into groups that share similar sets of employment barriers, the analysis of this report defines indicators for a range of different employment barriers. To ease presentation, the indicators are binary and express whether or not an individual circumstance constitutes an employment barrier.

Several of the barriers depend on underlying categorical variables. In this paper, we define the barriers in line with the cut-offs established in previous Faces of Joblessness projects (Fernandez et al., 2016; Fernandez et al., 2020; Farchy, Immervoll & Pacifico, 2020).

Barriers related to individual characteristics (BIC):

- Physical/mental health issues: Some or severe limitations in performing everyday activities due to long-lasting physical or mental health conditions
- Lack of education: Lower than upper secondary education
- Never worked: No past work experience
- No recent work experience: No work experience during the reference year
- Lack of skills: The most recent job was in a low-skilled occupation (one of the two lowest ISCO-08 occupation categories)
- Care responsibilities: Having a young child who requires care not covered by purchased or publicly available care services, while stating that the reasons for not working are care responsibilities or being the only person in the household who can provide these

Barriers related to economic incentives and motivation (BIM):

- High partner or non-labour income: A high share of income in the household unrelated to own work effort
- High earnings replacement (benefits): Out-of-work benefits are high relative to the individual's potential earnings

Barriers related to the employer and labour market structures (BEL):

- Low job opportunities: Lack of employment opportunities in the respective labour market area described by age, gender, and education

Barriers related to public services (BPS):

- Low contact with PES: Lack of participation in the public employment services described by age, gender, and education.

The fact that we have been able to identify only 10 employment barriers, relating to 9 of the identified barriers, is important to highlight. The results presented later in this report might be affected by this. For example, the EU-SILC, unfortunately, does not allow us to identify any barriers related to the individual's language skills. Further, it does not allow us to distinguish between mental and physical health issues. Including barriers related to, e.g., lack of language skills can potentially affect the results which will be presented later in this report. Therefore, it is strongly encouraged that future research test the results in this report by utilising other data sources, thus allowing to include more barriers from our framework (another data source could be national administrative data).

We understand employment barriers as obstacles that hinder individuals from participating in the labour market. These barriers are constructed independently of an individual's demographic group. However, certain groups of individuals may be more susceptible to specific barriers than others. A special case is individuals with health issues, constituting both an employment barrier and a traditional target group in this report.

2.4 Latent class analysis

This section describes the statistical method for segmenting individuals with no or weak labour market attachment into groups that are meaningful for designing, tailoring, and targeting activation and employment support policies (AESPs). The underlying premise is that individuals with no or weak labour market attachment face a number of possible employment obstacles, and each of them may call for different policy responses. Building on the operationalised employment barriers developed in the previous section, the objective is to obtain groups of individuals with combinations of employment barriers that are as similar as possible within groups and as different as possible between groups.

The segmentation approach focuses explicitly on employment barriers rather than other characteristics commonly used when breaking down labour market statistics (e.g., age). As highlighted in the introduction, the reason is that subgroups which policy debates commonly consider at risk of labour market marginalisation (e.g., young people, seniors, immigrants, persons with disabilities), are in fact highly heterogeneous in terms of their employment obstacles. Thus, tailoring policies to only the most prominent real or assumed barriers facing these groups may not be sufficient for increasing their employment chances.

We use the statistical segmentation method called latent class analysis. This method exploits the interrelations of the employment barriers to identify population subgroups sharing the same employment barriers, e.g., lack of education and health issues for Group 1; no recent experience and lack of local employment opportunities for Group 2, etc. The approach in the present study adapts the LCA model described in Fernandez et al. (2016) to the structure and content of the Nordic EU-SILC.

Appendix B provides further technical details on the model selection procedure. To briefly summarise, the model selection process starts with the definition of a baseline model, which is repeatedly estimated with an increasing number of latent classes. The baseline model includes the set of indicators derived in Section 3 and takes the form of a standard latent class model. The choice of the optimal number of classes is based on goodness-of-fit statistics as well as theoretical considerations.

3. Descriptive statistics

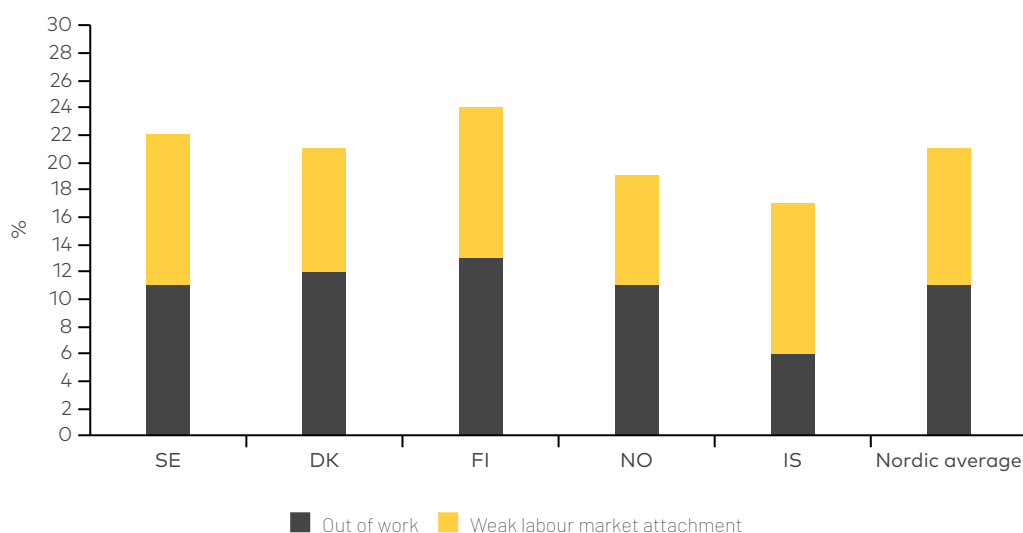
In this chapter, various descriptive statistics are presented. First, we show the share of the working-age population belonging to the group of individuals with no or weak labour market attachment in each of the Nordic countries. Second, we move our attention to the operationalised employment barriers, where we demonstrate the prevalence of the employment barriers in the Nordic countries, how the employment barriers are related to the traditional target groups, the number of barriers typically faced, and how the barriers coexist.

3.1 Individuals with no or weak labour market attachment

As described earlier, the population of interest in this analysis is individuals with no or weak labour market attachment (see Section 2.2 for further description of this group).

Figure 3.1 shows the share of individuals with no or weak labour market attachment in the Nordic Countries as a fraction of the working-age population in each Nordic country (excluding students and individuals enrolled in compulsory military service). The figure shows that 11 pct. of the working-age population in the Nordic countries are out of work and that 10 pct. have a weak labour market attachment. Further, the figure shows some interesting cross-country variation. For example, Iceland has a lower share of their working-age population out of work compared to the other Nordic countries, with Finland having a slightly higher share out of work.

Figure 3.1 Individuals with no or weak labour market attachment, pct. of working-age population (excluding individuals enrolled in education or compulsory military services)



Source: Own calculations based on EU-SILC from the Nordic countries.

Note: In all calculations, we use the weighting from the selected respondent. Following OECD (2016), working age is defined as 16–64 years of age.

Further, it should be noted that a relatively large fraction of Iceland's persons with no or weak labour market attachment, compared to the other Nordic countries, consists of individuals with weak labour market attachment. In Iceland, the persons with weak labour market attachment constitute 65 pct. of the group with no or weak labour market attachment, whereas the share in Norway is 42 pct. This is worth keeping in mind when we look into the cross-Nordic differences in the prevalence of barriers.

These findings are somewhat consistent with findings in the first report in this project. Based on Eurostat's labour force survey, we also demonstrated in this report that Iceland has a higher employment rate and Finland a lower employment rate compared to the other Nordic countries (Højbjerg et al., 2022).

Note that Figure 3.1, however, is not completely comparable to our previous work for a number of reasons. First, this report is based on Eurostat's EU-SILC, whereas the previous report was based on Eurostat's labour force survey. Second, we use different populations. In this report, we consider the working-age population excluding individuals in education and compulsory military service. In the previous report, we studied the entire working-age population, and this fact contributes to explain why, in the first report, we found a labour force participation rate which was lower compared to what Figure 3.1 suggests. Third, we study different time periods. In this report, we used the most recent EU-SILC for each Nordic country, whereas we used the most recent labour force survey accessible in the previous report.

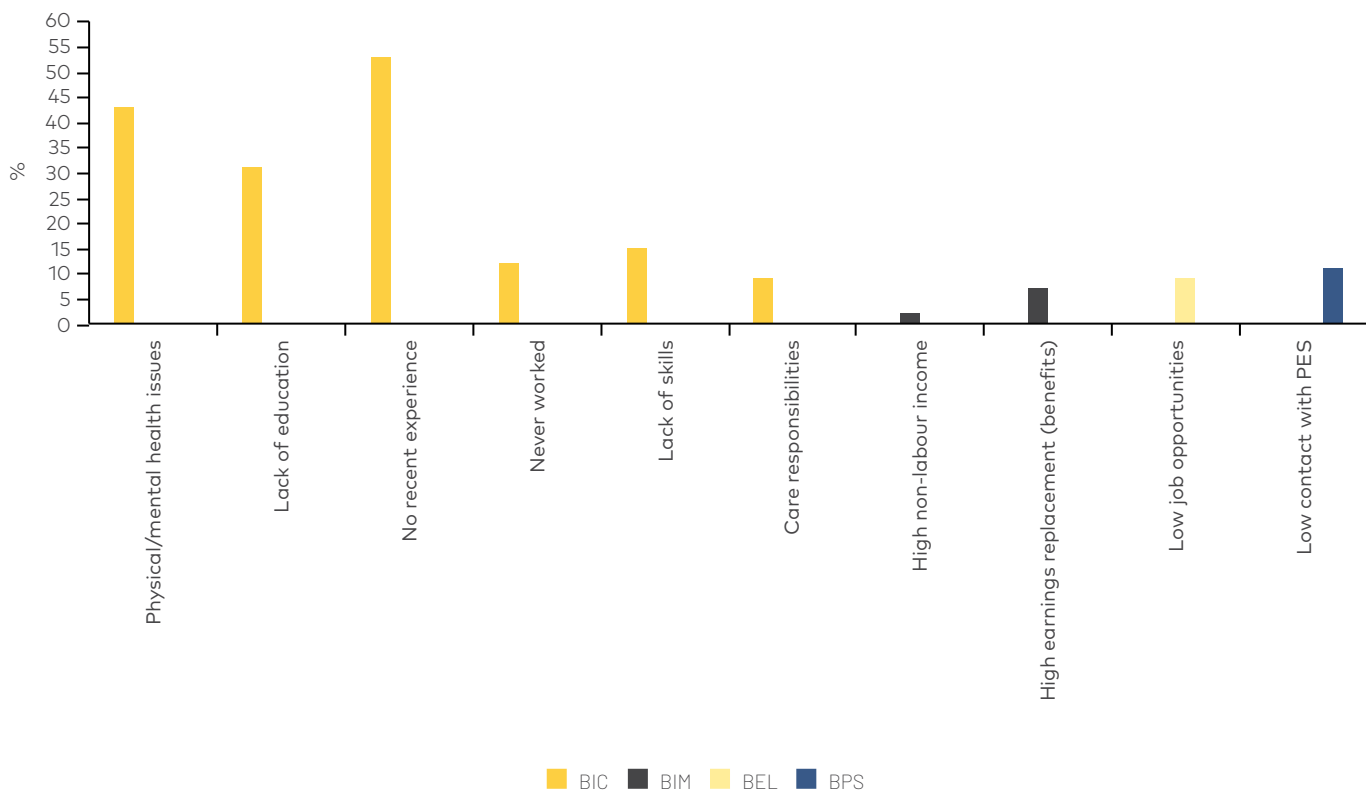
In the next sections, we will only focus on the individuals who have no or weak labour market attachment since the purpose of this report is to further understand the employment barriers this group faces and group them according to the barriers that they face.

3.2 Prevalence of the employment barriers

In this subsection, we examine the prevalence of the employment barriers in the Nordic countries. Figure 3.2 shows which of the 10 barriers are most common in the Nordic countries.

Several interesting patterns can be highlighted. First, barriers related to individual characteristics (BIC) seem to be relatively important. In particular, health issues, lack of education, and no recent experience are widespread barriers. For example, 43 pct. of the individuals with no or weak labour market attachment are limited in their daily activities to some degree due to either physical or mental health issues, whereas 31 pct. lack education. However, other barriers (e.g., care responsibilities) are also present in the Nordic countries even though they seem less important.

Figure 3.2 Prevalence of employment barriers among individuals with no or weak labour market attachment, pct. of individuals with no or weak labour market attachment



Source: Own calculations based on EU-SILC from the Nordic countries.

Note: In all calculations, we use the weighting from the selected respondent.

Second, barriers related to economic incentives and motivation (BIM), the employer and labour market structures (BEL), and public services (BPS) are also present but less important. For example, 11 pct. of the individuals with no or weak labour market attachment lack contact with the public employment services to some degree, whereas only 2 pct. of the individuals in this group have lacking incentives due to high non-labour income (which include, e.g., both high partner income as well as high passive income from return on shares).

Figure 3.2 shows how prevalent the employment barriers are in the entire Nordic region. We also find interesting cross-Nordic variation in how prevalent the employment barriers are in the Nordic countries. Figure 3.3 shows the prevalence of the employment barriers in each of the Nordic countries. In general, the figure shows that there are great similarities between the countries in terms of the prevalence of barriers. However, there are some interesting cross-country variations.

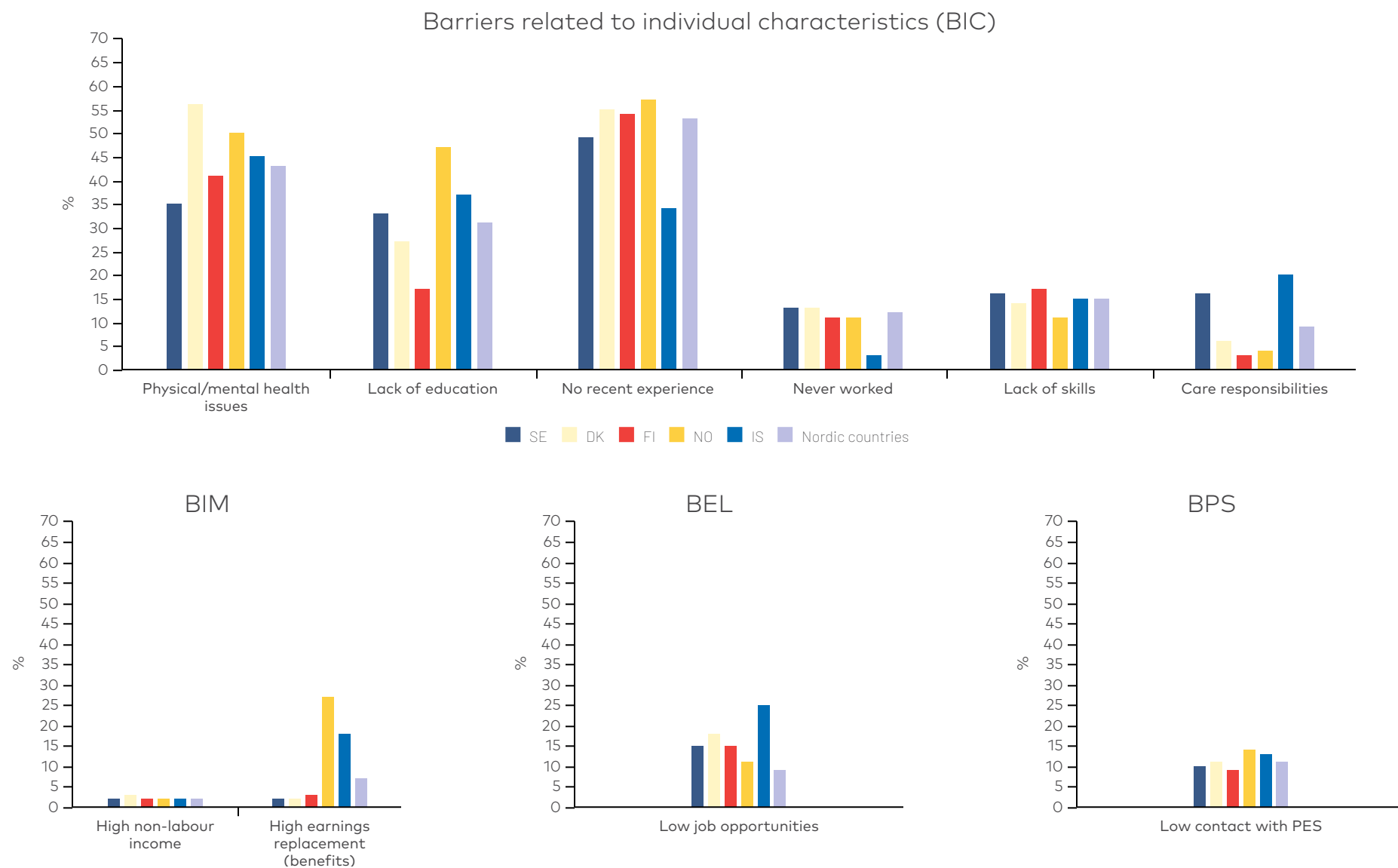
For example, 56 pct. of the individuals with no or weak labour market attachment in Denmark struggle with some degree of health issues, whereas only 35 pct. in Sweden struggle with health issues. Similarly, care responsibilities are more prevalent in Sweden and Iceland, where 16 pct. and 20 pct., respectively, of the individuals with no or weak labour market attachment face this barrier. In the other Nordic countries, 4–6 pct. face this barrier.

Further, high earnings replacement (benefits) seems to constitute a relatively important employment barrier in Norway and Iceland, where 27 pct. and 18 pct., respectively, of the individuals with no or weak labour market attachment face this barrier. This is consistent with previous work in OECD's Faces of Joblessness project, where it is shown that approximately 30 pct. of the individuals with no or weak labour market attachment face this employment barrier in Norway, based on EU-SILC from 2017 (Fernandez et al., 2020).

3.3 The employment barriers and the traditional target groups

In the previous research report, we found indications of high similarity in the barriers faced by the traditional demographic target groups, i.e., young, seniors, etc. (Højbjerg et al., 2023). These were only indications, but we are able to confirm in this section that there is a high degree of similarity in the barriers which the traditional target groups face. This is demonstrated in Figure 3.4, which shows the prevalence of the employment barriers among the traditional demographic target groups. In general, the figure shows that there is a high degree of similarity in the barriers which the traditional target groups face. For example, among individuals with no or weak labour market attachment, lack of education is faced by 32 pct. of the young people, 31 pct. of the seniors, 40 pct. of the immigrants, and 35 pct. of the persons with disabilities.

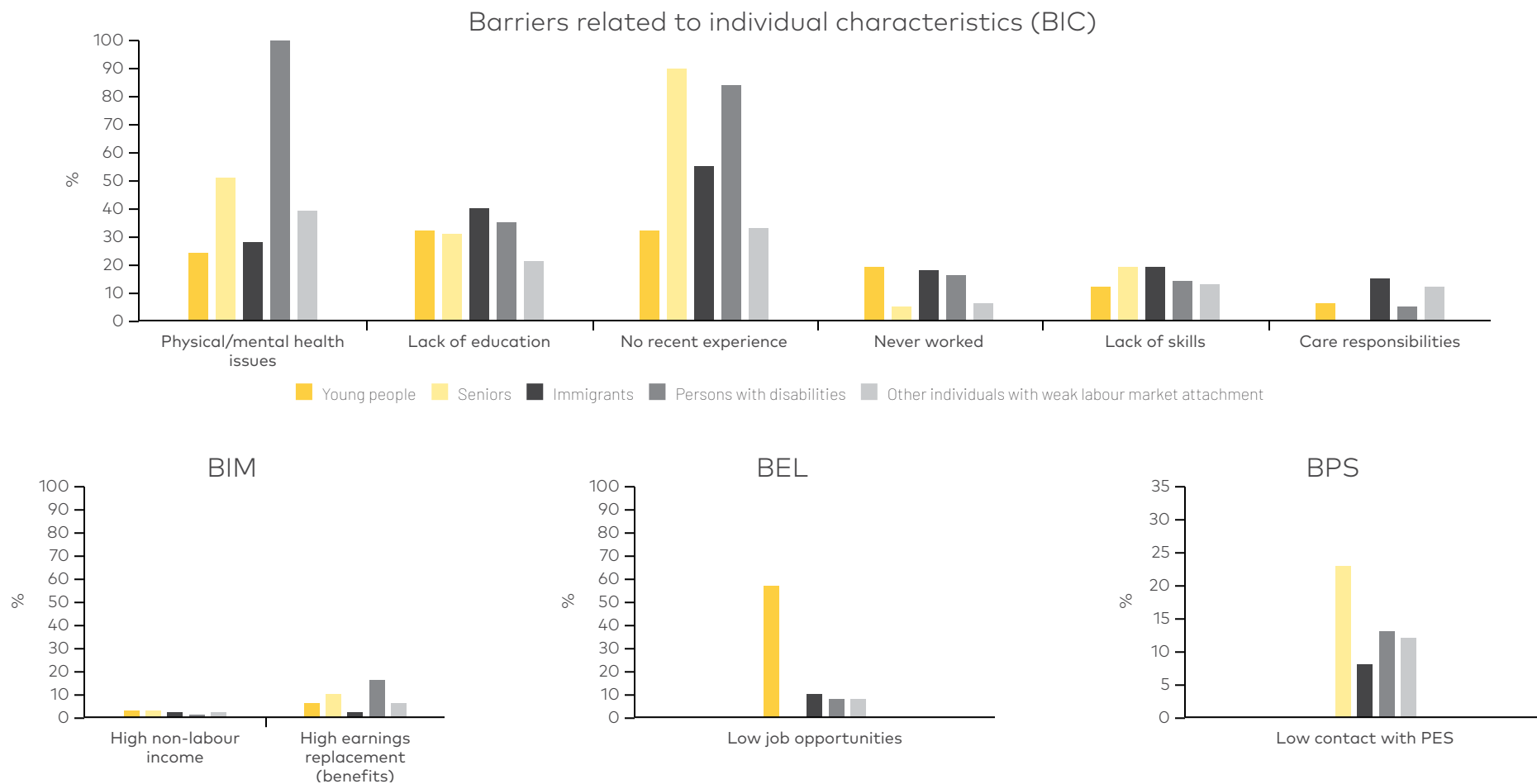
Figure 3.3 Prevalence of employment barriers among individuals with no or weak labour market attachment in each of the Nordic countries, pct. of individuals with no or weak labour market attachment



Source: Own calculations based on EU-SILC from the Nordic countries.

Note: In all calculations, we use the weighting from the selected respondent.

Figure 3.4 Prevalence of employment barriers among individuals with no or weak labour market attachment, pct. of individuals with no or weak labour market attachment



Source: Own calculations based on EU-SILC from the Nordic countries.

Note: In all calculations, we use the weighting from the selected respondent. Notice that a person is assigned to only one of the traditional target groups. We have used the following hierarchy: persons with disabilities, immigrants, young people/seniors. Persons with disabilities are people who are severely limited in daily activities due to mental/physical health issues. Immigrants are persons born outside the reference country. Young people are individuals aged 18–29 years, while seniors are individuals aged 55–64 years.

On the other hand, Figure 3.4 also demonstrates that some barriers are still more prevalent among certain traditional demographic target groups than others. For example, 90 pct. of the seniors and 84 pct. of the persons with disabilities have no recent experience, which might be explained by, for example, early retirement. Further, the figure shows that high earnings replacement is prevalent especially among persons with disabilities, where 16 pct. of the individuals face this barrier. Lastly, young people stand out as regards the barrier related to low job opportunities as well as the barrier related to low contact with the public employment services (PES). 57 pct. of the young individuals face a barrier related to low job opportunities, whereas no young people face a barrier related to lack of contact with PES.

Further, it is worth mentioning that one of the reasons for the high degree of similarity in the barriers that the traditional target groups face is also a result of the barriers we have been able to identify in data. For example, in the framework, an employment barrier that hinders some immigrants from participating in the labour market is lack of language skills. This constitutes an employment barrier only for immigrants. However, there are no language skill variables in EU-SILC, and it is not possible to construct a proxy for language skills since the origin-of-birth variable in EU-SILC is also deficient.

3.4 Number of barriers and how they coexist

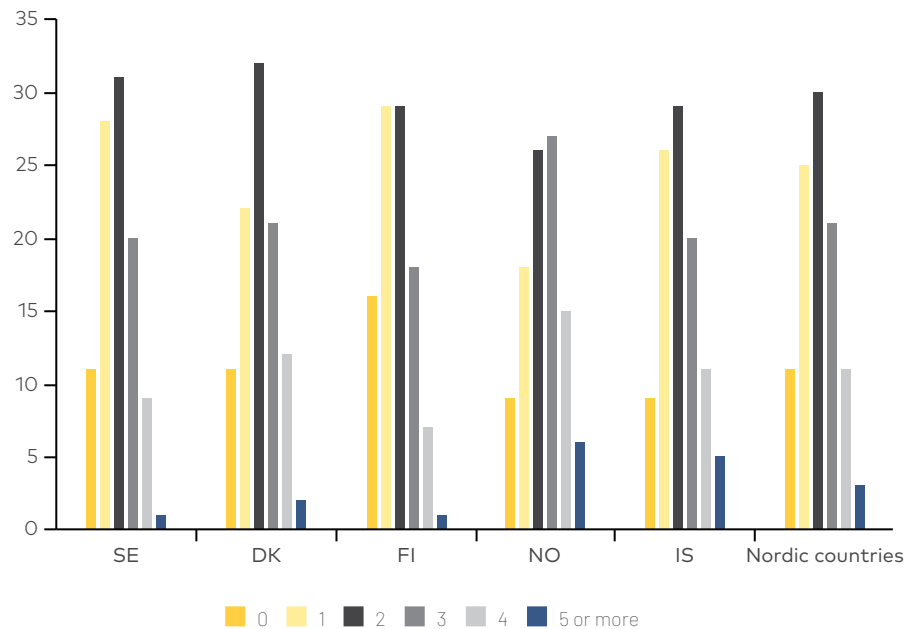
In the previous section, we studied how prevalent each of the employment barriers is in the Nordic countries. However, another interesting perspective is how many barriers each individual faces, hence how complex the person's situation is. In this section, we dig deeper into this topic by first examining the number of barriers the individuals with no or weak labour market attachment in the Nordic countries face, then how the barriers coexist.

Figure 3.5 shows the number of identified employment barriers that persons with no or weak labour market attachment face in each of the Nordic countries as well as in the Nordic countries as a whole. Looking at the Nordic countries as a whole, two interesting conclusions can be drawn. First, the figure shows that two-thirds of the population of interest in the Nordic countries face two or more barriers, highlighting the complexity in this policy area.

Second, the figure shows that 14 pct. face a highly complex set of barriers, with a total of four or more barriers, indicating that these individuals face wicked problems characterised by many interdependent factors.

The fact that many vulnerable individuals face a complex set of barriers is consistent with previous findings in this project, where we have shown that the barrier set is typically complex and intertwined, which highlights the complexity in this policy area (Højbjerg et al., 2023). Later in this chapter, we will further examine which concrete set of employment barriers is the most common.

Figure 3.5 Number of employment barriers faced among individuals with no or weak labour market attachment, pct. of individuals with no or weak labour market attachment



Source: Own calculations based on EU-SILC from the Nordic countries.

Note: In all calculations, we use the weighting from the selected respondent.

Looking at the barrier complexity across the Nordic countries, there are some differences and similarities. For example, Figure 3.5 shows that the barrier complexity is left-skewed in Norway and Iceland, meaning that more individuals face a more complex set of barriers in these countries. In Norway, 6 pct. of the population of interest face five or more barriers, while 5 pct. in Iceland do so. In the other Nordic countries, 1–2 pct. face five or more barriers. That the barrier complexity is significantly left-skewed in Norway and Iceland could be a result of fewer individuals having no or weak labour market attachment in these countries (as demonstrated in Figure 3.1). When comparing the complexity of employment barriers in Sweden, Denmark, and Finland, it appears that individuals in Finland generally face fewer barriers, while individuals in Sweden and Denmark seem to exhibit similarities to some degree. However, a larger share of individuals face four barriers in Denmark, while a larger share face one barrier in Sweden.

Again, it is worth mentioning that these results are most likely bottom-edge estimates of the complexity of barriers in the Nordic countries since we are only able to operationalise 10 barriers related to 9 out of the 24 employment barriers identified in previous work in this project (Højbjerg et al., 2023).

Having established that numerous individuals in the Nordic countries encounter multiple employment barriers that affect their chances of employment, we will now delve deeper into the most prevalent combinations of these barriers. Table 3.1 provides a two-dimensional representation showcasing the relationship between various employment barriers and their overlap. The table must be read column by column, with each column showing the percentage of individuals facing the barrier at the top of the column while also facing one of the other barriers. For example, all the individuals in Column 1 have physical/mental health issues, and 33 pct. of these individuals also lack education, 69 pct. also have no recent experience, etc. Again, this table underlines the fact that many individuals experience several employment barriers affecting their employment chances. The barriers that most often coincide with the other barriers are health issues, lack of education, and having no recent employment experience. For example, at least 23 pct. of the individuals facing one of the ten barriers also face a barrier related to health issues, while at least 35 pct. of the individuals facing one of the ten barriers also face barriers related to no recent experience.

Table 3.1 Coexistence of barriers, pct. of individuals facing one of the barriers in the columns

	1. PHYSICAL/ MENTAL HEALTH ISSUES	2. LACK OF EDU- CATION	3. NO RE- CENT EXPE- RIENCE	4. NEVER WORKED	5. LACK OF SKILLS	6. CARE RESPONSI- BILITIES	7. HIGH NON- LABOUR INCOME	8. HIGH EARNINGS REPLACE- MENT	9. LOW JOB OPPOR- TUNITIES	10. LOW CONTACT WITH PES
Physical/mental health issues	100	47	57	47	46	27	23	73	31	49
Lack of education	33	100	37	49	47	29	19	49	16	2
No recent experience	69	63	100	95	53	45	43	80	35	53
Never worked	13	19	22	100	0	11	5	19	15	3
Lack of skills	16	23	15	0	100	13	5	13	14	9
Care responsibilities	6	9	8	8	8	100	9	7	12	4
High non-labour income	1	1	2	1	1	2	100	1	2	7
High earnings replacement	11	11	10	11	6	5	3	100	6	9
Low job opportunities	11	8	10	19	14	21	15	14	100	0
Low contact with PES	12	1	11	3	6	5	32	14	0	100

Source: Own calculations based on EU-SILC from the Nordic countries.

Note: In all calculations, we use the weighting from the selected respondent. The table must be read column by column, with each column showing the percentage of individuals facing the barrier at the top of the column while also facing one of the other barriers. For example, all the individuals in Column 1 have physical/mental health issues, and 33 pct. of these individuals also lack education, 69 pct. have no recent experience, etc.

Another interesting point that can be deduced from Table 3.1 is that individuals who lack education and individuals who have low job opportunities in the respective labour market segments only and to a very little degree (1 pct. and 0 pct., respectively) experience low contact with the public employment services. Further, individuals with high non-labour income (i.e., income that is independent of the individual's own work effort) relatively often have low contact with the public employment services (32 pct.).

Table 3.1 is only a two-dimensional representation of the relationship between the different employment barriers. However, Figure 3.5 showed that 14 pct. of the individuals with no or weak labour market attachment face four or more barriers. In the last part of this section, we investigate which sets of barriers are typical among these 14 pct. Table 3.2 shows the most prominent sets of barriers among individuals facing four or more barriers, and it reveals several interesting results. First, barriers related to individual characteristics (such as health issues, lack of education, and lack of experience) are the most prominent, which might not come as a surprise since they were also the most prevalent among the individuals with no or weak labour market attachment in the Nordic countries.

Table 3.2 Top 5 of the most prominent sets of barriers among individuals facing four or more barriers

	SETS OF BARRIERS				
	1	2	3	4	5
Physical/mental health issues	X	X	X	X	X
Lack of education	X	X	X		X
No recent experience	X	X	X	X	X
Never worked		X		X	X
Lack of skills	X				
Care responsibilities					
High non-labour income					
High earnings replacement			X		X
Low job opportunities				X	
Low contact with PES					
Pct. of individuals facing four or more barriers	18	17	9	6	6

Source: Own calculations based on EU-SILC from the Nordic countries.

Note: In all calculations, we use the weighting from the selected respondent.

Second, the table shows that 18 pct. of the individuals facing four or more barriers face the following complex set of barriers: health issues, lack of education, no recent experience, and lack of skills. 17 pct. of the individuals face almost the same set of barriers, except that lack of skills is replaced by never worked.

This highlights that a relatively significant part of the individuals with no or weak labour market attachment faces a complex set of barriers, where no simple solutions exist. For instance, how can individuals in the first column (who have health issues, lack of education, lack of skills, and no recent work experience) be helped into the labour market in the best way possible? Do you follow the JobFirst strategy – as has been done in Denmark, for example – where vulnerable individuals are offered business internships to include them in the labour market, thereby overcoming their lack of recent experience and skills to some degree? Do you start by helping these individuals with their health issues? Or do you help them get into education? These questions are complex and difficult to answer, but we will try to approach an answer in the next phase of this research project.

4. Latent class analysis

In this chapter, we present the results of a latent class analysis (LCA) based on a pooled sample of individuals with no or weak labour market attachment in the five Nordic countries. The use of a pooled model serves multiple purposes: it increases the sample size, enhances comparability between countries, and simplifies the interpretation of results by avoiding unnecessary complexity associated with estimating separate models for each country.

Combining data from multiple countries in an LCA presents potential challenges, such as cultural and contextual variations that may inappropriately influence the latent classes. While acknowledging this, it is important to note that the Nordic countries share a relative similarity in terms of culture and labour markets, reducing the magnitude of this challenge. Further, combining data from different countries can also affect the model in negative ways due to measurement invariance across countries. In the analysis, we use the harmonised EU-SILC. Therefore, the data and the measurements we use to identify employment barriers are as similar as possible across the Nordic countries, meaning that measurement invariance does not possess a great challenge in the analysis below.

The chapter begins by presenting the key findings and interpretations from the LCA. Subsequent sections provide a detailed exploration of the outputs that led to these conclusions, allowing for a comprehensive understanding of the results.

4.1 Summary of LCA

In this section, we will present the main conclusions and our interpretation of the results from the latent class analysis (LCA). Table 4.1 summarises the output of the LCA. First, it reveals the identification of 8 data-driven target groups, which represent subgroups of individuals sharing a similar set of employment barriers. The primary barrier and – if any – secondary barrier refer to the most important barrier(s) for the data-driven target group. The table also contains information about the share of individuals with no or weak labour market attachment assigned to the group. Lastly, we provide a short description of the group.

The table demonstrates several interesting findings from our analysis. First, it shows that there is a somewhat clear distinction between groups with a relatively high share of individuals with no recent experience in the labour market and groups with a relatively low share of individuals with recent experience. The first 5 groups, to a large degree, all face an employment barrier related to no recent experience, whereas the remaining 3 groups, to a lesser degree, face barriers related to recent experience.

Another interesting finding relates to Group 8, which comprises approximately one-third of the individuals with no or weak labour market attachment, making it the largest identified data-driven target group. This group consists of individuals who are relatively close to the labour market and can be considered temporarily out of work, as a small percentage of individuals in this group face the barrier of no recent experience in the labour market. In fact, this group does not have any dominant barriers, and their barrier set appears to be simpler compared to the barriers sets of the other 7 data-driven target groups. On average, they face only one barrier, which is significantly low compared to some of the other identified groups.

Lastly, it is also important to be aware of the existence of individuals with more complex combination of barriers, such as those who have never worked (Group 1) or those who lack both work experience and education (Group 2). On average, individuals in these groups face three and four employment barriers, respectively.

Consideration of these 8 identified data-driven target groups is paramount when aiming to place a heightened emphasis on addressing employment barriers within future employment policies in the Nordic countries. These data-driven target groups could be used to facilitate discussions of the strengths and limitations of different policy interventions for concrete groups of policy clients. They could also be used to help inform decisions on whether to channel additional efforts towards specific priority groups.

Table 4.1 Summary of the latent class analysis: the 8 data-driven target groups

	GROUP	PRIMARY BARRIER	SECONDARY BARRIER	SHARE, PCT.	SHORT DESCRIPTION
No recent experience in the labour market	1	Never worked		6	A relatively small group of individuals who face three employment barriers on average. The group consists of a relatively large share of young people, women, and immigrants from non-EU countries.
	2	Never worked	Lack of education	5	The primary employment barriers for this group are no work experience and lack of education. The individuals in the group face four employment barriers on average, and many of the individuals are young and from (other) EU and non-EU countries.
	3	Health issues	Lack of education	21	This group consists of more than one-fifth of the individuals with no or weak labour market attachment in the Nordic countries. The most important barriers for this group are health issues and lack of competence-giving education. Further, the group consists of a relatively large share of women.
	4	Health issues	Low contact with PES	4	This group, like Group 3, has health issues as the primary barrier. However, unlike Group 3, the secondary barrier is their low contact with the public employment services (PES). Further, this group consists of a high share of seniors.
	5	Low job opportunities	High earnings replacement (benefits)	2	A small group consisting of individuals whose leading employment barriers are low job opportunities in the relevant labour market segment and a lack of incentives to work due to high benefits. The group consists of a relatively large share of women.
Recent experience in the labour market	6	Lack of education	Lack of skills	11	The ruling barriers for this group are lack of education and lack of skills, and the group comprises a relatively large share of individuals born in non-EU countries who face two employment barriers on average.
	7	Low contact with PES		19	Another large data-driven target group, whose primary barrier is a lack of contact with the public employment services. The group consists of a large share of seniors, and they face one employment barrier on average.
	8	(Temporarily out of work)		33	This is the largest group among the 8 data-driven target groups, and it consists of individuals who are relatively close to the labour market and, hence, can be considered temporarily out of work. The individuals in the group face one employment barrier on average.

Source: Own calculations based on EU-SILC from the Nordic countries.

Note: In all calculations, we use the weighting from the selected respondent.

4.2 Prevalence of barriers in data-driven target groups

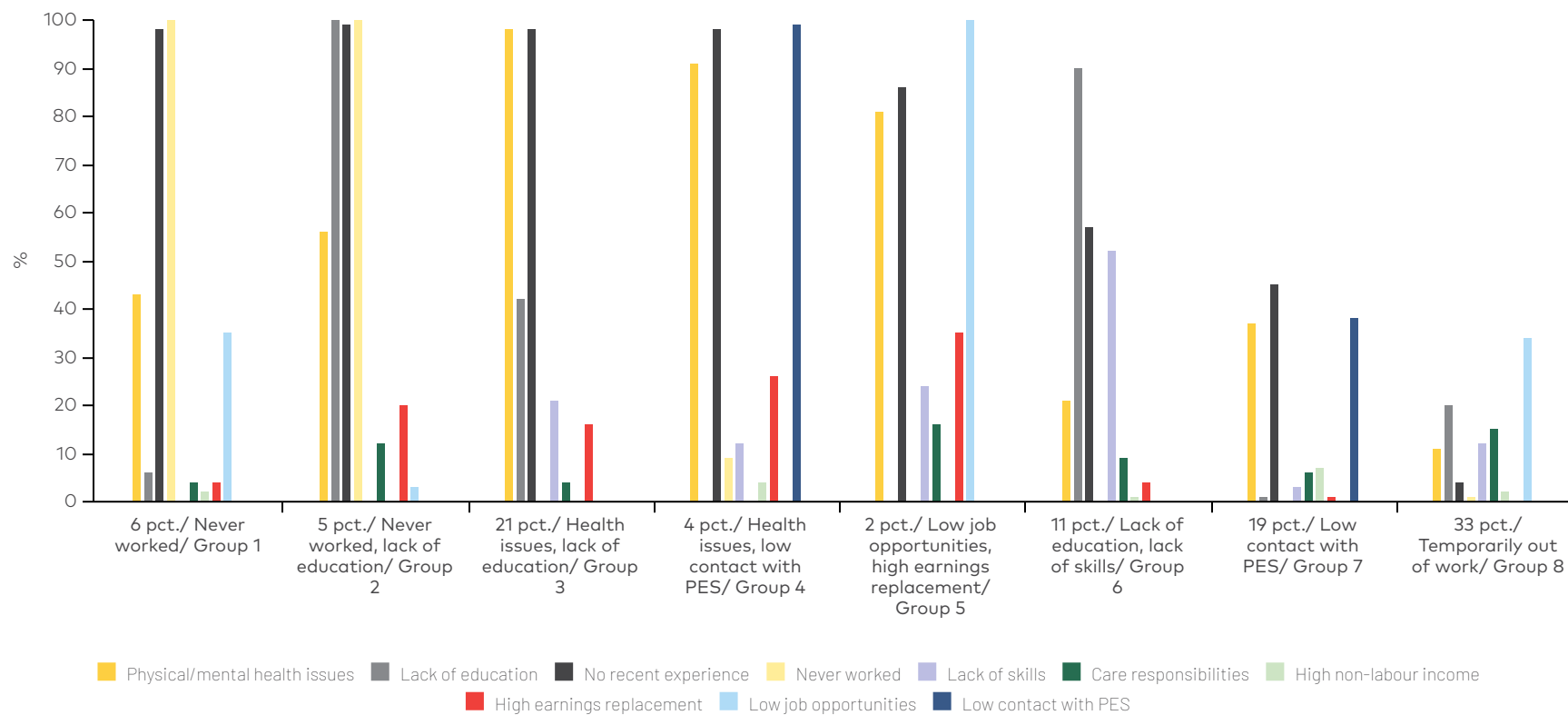
In this section, we will delve deeper into the 8 identified groups and highlight the most and least prevalent barriers within each group, which forms the basis for naming them. To briefly recap, LCA is a method that exploits the interrelations of the employment barriers to identify population subgroups sharing the same employment barriers. In other words, the only input to the statistical model is the employment barriers each individual faces. Hence, the model completely disregards the traditional demographic target groups.

Figure 4.1 shows how prevalent the 10 barriers are in each identified group. Each column represents the prevalence of the barrier in the group. For instance, the first group of individuals all face an employment barrier related to having never worked, and this is the primary barrier that identifies this group of individuals. In comparison, the second group of individuals are quite like the first one in many ways since they have also never worked, but this group of individuals also lack education. These two groups consist of 11 pct. of all the individuals with no or weak labour market attachment in the Nordic countries.

The largest group is Group 8, which consists of 33 pct. of the individuals with no or weak labour market attachment. The group consists of individuals who are relatively close to the labour market, hence can be considered to be temporarily out of work, since a low share of the individuals face the barrier related to no recent experience. In fact, this group of individuals do not have any ruling barriers in general, and their barrier set is simpler compared to the barrier sets of the other 7 data-driven target groups.

The second-largest group is Group 3, which consists of 21 pct. of the individuals with no or weak labour market attachment in the Nordic countries. We have labelled this group health issues and lack of education since 98 pct. of the individuals in the group have either physical or mental health issues that limit the individuals in daily activities. In addition, 42 pct. of the individuals do not have any competence-giving education, which is relatively high compared to most of the other groups.

Figure 4.1 Prevalence of barriers in each identified group, pct. of individuals in the group

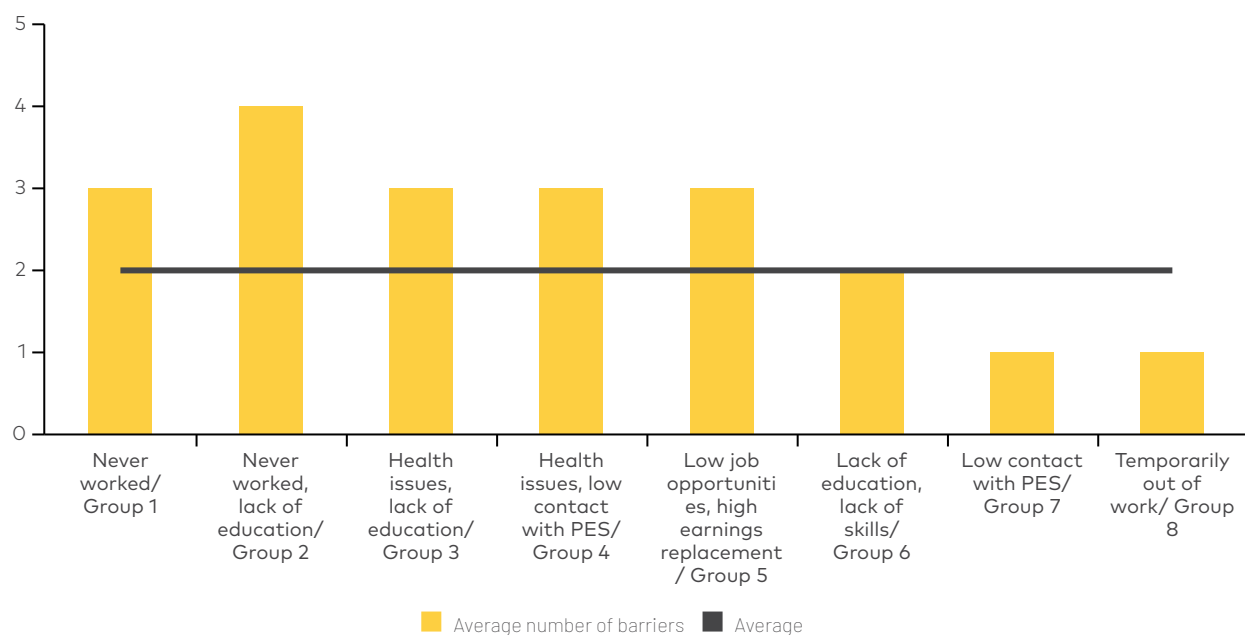


Source: Own calculations based on EU-SILC from the Nordic countries.

Note: In all calculations, we use the weighting from the selected respondent.

In addition to variations in the most common barriers among the 8 data-driven target groups, there are also differences in the average number of employment barriers in each group. Figure 4.2 illustrates these differences, showing that the average number of barriers ranges from 1 to 4. Group 2 is the group facing the highest number of employment barriers on average, while Group 8 experiences the fewest barriers. This further emphasises that individuals in Group 8 are closer to the labour market and may require less comprehensive support to overcome their employment barriers, unlike Group 2, where individuals face a more complex set of barriers. In addition to variations in the most common barriers among the 8 data-driven target groups, there are differences in the average number of employment barriers with each group.

Figure 4.2 Average number of barriers for each data-driven target group



Source: Own calculations based on EU-SILC from the Nordic countries.

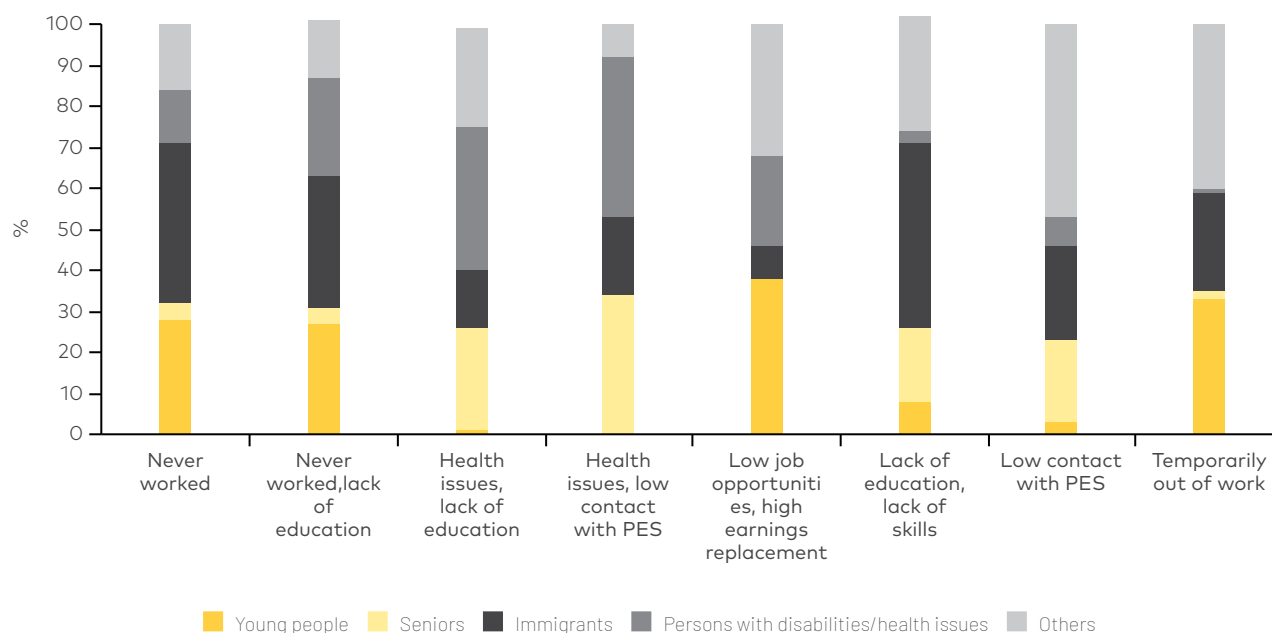
Note: In all calculations, we use the weighting from the selected respondent.

4.3 Demographic characteristics of data-driven target groups

In this section, we look further into the demographic characteristics of the individuals in each data-driven target group. It is possible to provide these statistics since everyone in our sample is assigned to one of the data-driven target groups. Hence, ex-post, it is possible to study the individuals in, e.g., the first group in terms of demographic characteristics. If each traditional demographic target group is uniquely identified in any of the data-driven target groups, it shows that the traditional demographic individuals within a target group face the same employment barriers. If each traditional demographic target group, on the other hand, is grouped into various data-driven target groups, this shows that each of the traditional demographic target groups is highly heterogeneous in terms of the employment barriers faced by the group. Therefore, tailoring policies to only the most prominent real or assumed barriers facing these groups may not be sufficient for increasing their employment chances.

Figure 4.3 shows how each of the data-driven target groups consists of the traditional demographic target groups. For example, the first data-driven target group consists of 28 pct. young people, 4 pct. seniors, 39 pct. immigrants, 13 pct. individuals with severe physical/mental health issues, and 16 pct. other individuals with no or weak labour market attachment. Starting with the discussion from the introduction to this section, the figure shows that none of the traditional demographic target groups completely dominate any of the data-driven target groups. For example, none of the data-driven groups consist of more than 50 pct. of any of the traditional target groups, and the general picture is that each of the data-driven target groups, broadly speaking, consists of a diverse composition of the traditional demographic target groups. However, there are exceptions to the rule since certain groups, to a significant degree, comprise some of the traditional target groups. For example, Group 6 consists of 45 pct. immigrants, Group 7 consists of 38 pct. young people, and Group 4 consists of 39 pct. persons with health issues.

Figure 4.3 Share of traditional demographic target group in each data-driven target group, pct. of individuals in the data-driven target group



Source: Own calculations based on EU-SILC from the Nordic countries.

Note: In all calculations, we use the weighting from the selected respondent. Notice that a person is assigned to only one of the traditional target groups. We have used the following hierarchy: persons with disabilities, immigrants, young people/seniors. Persons with disabilities are people who are severely limited in daily activities due to mental/physical health issues. Immigrants are persons born outside the reference country. Young people are individuals aged 18–29 years, while seniors are individuals aged 55–64 years.

In Table 4.2, we look further into the composition of gender, age, and immigrant status in the data-driven target groups. On the one hand, the table further supports the picture that none of the data-driven target groups are dominated by any specific demographic characteristics. On the other hand, some characteristics are relatively more prevalent in each of the data-driven target groups. For example, Group 4 consists of 86 pct. individuals who are older than 50 years, and Group 5 consists of 74 pct. women. In that sense, the traditional demographic way to define target groups cannot be completely disregarded since, according to the LCA, they share similar set of barriers in some instances and to some degree.

Table 4.2 Descriptive statistics of the 8 data-driven target groups, pct. of individuals in the data-driven target group

GROUP	NAME OF GROUP	SIZE	WOMEN	AGE			REGION OF BIRTH	
				AVERAGE AGE	SHARE BELOW 30	SHARE ABOVE 50	EU	NON-EU COUNTRIES
1	Never worked	6	61	35	49	12	6	33
2	Never worked, lack of education	5	55	34	45	14	21	29
3	Health issues, lack of education	21	59	52	3	60	3	11
4	Health issues, low contact with PES	4	60	58	0	86	1	18
5	Low job opportunities, high earnings replacement	2	74	30	48	0	1	7
6	Lack of education, lack of skills	11	47	47	16	42	6	39
7	Low contact with PES	19	58	52	5	57	4	19
8	Temporarily out of work	33	58	36	41	16	7	16

Source: Own calculations based on EU-SILC from the Nordic countries.

Note: In all calculations, we use the weighting from the selected respondent. The columns related to region of birth only refer to individuals who are born outside the country where the survey took place.

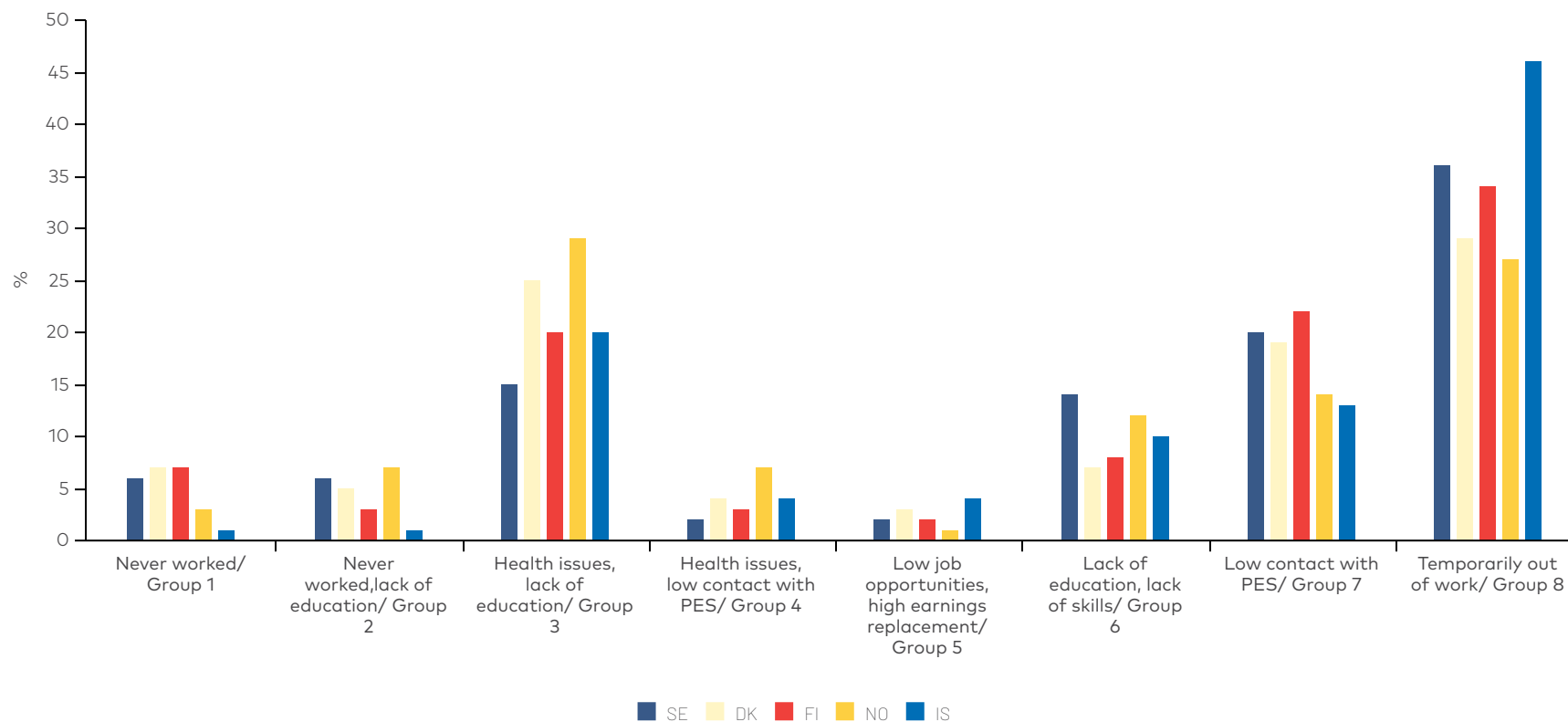
Table 4.2 also shows that women, in general, are overrepresented in the population of individuals with no or weak labour market attachment in the Nordic countries. More specifically, women constitute 57 pct. of the individuals with no or weak labour market attachment in the Nordic countries, which points to women, in general, being more likely to have potential labour market difficulties. Concerning the number of barriers between men and women with no or weak labour market attachment, we also see that women are slightly more challenged compared to men. Women with no or weak labour market attachment face 1.96 employment barriers on average, whereas men with no or weak labour market attachment face 1.86 employment barriers on average.

Notice that Figure 4.3 and Table 4.2 are not completely comparable since it is required in Figure 4.3 that each individual be assigned to only one of the traditional target groups. If any overlap occurred (e.g., both young and immigrant or both health issues and immigrant), we made use of the following hierarchy: persons with disabilities, immigrants, young people/seniors. This means that individuals are assigned on the basis of health issues before immigrant status and on the basis of immigrant status before being either young or senior. Therefore, some discrepancy can be found between Figure 4.3 and Table 4.2. For example, Group 2 consists of 32 pct. immigrants in Figure 4.3, while it consists of 50 pct. immigrants in Table 4.2.

As alluded to in the introduction of this chapter, we have used a pooled sample of individuals with no or weak labour market attachment in the five Nordic countries. Therefore, it is interesting to examine the groups to which the populations of these five Nordic countries are allocated. This is presented in Figure 4.4, which shows the fraction of, e.g., Swedes allocated to Group 1, Group 2, Group 3, etc. The figure shows that the populations of the five Nordic countries are more or less evenly distributed in the 8 data-driven target groups. For example, Group 3 consists of 15 pct. of the Swedes, 25 pct. of the Danes, 20 pct. of the Finns, 29 pct. of the Norwegians, and 20 pct. of the Icelanders with no or weak labour market attachment. This demonstrates that no Nordic country stands out significantly in terms of the barriers faced by their individuals with no or weak labour market attachment.

These findings indicate two important points. First, the cultural and contextual differences among the five Nordic countries are relatively similar, justifying our use of a pooled sample. Second, individuals with limited labour market attachment in the Nordic countries generally encounter similar employment barriers, suggesting the potential for cross-Nordic learning and collaboration. However, it is worth noting that this result is naturally influenced by the fact that we have been able to operationalise only 10 employment barriers related to 9 out of the 24 employment barriers from our framework.

Figure 4.4 National origin in the data-driven target groups, pct. of individuals from the respective countries



Source: Own calculations based on EU-SILC from the Nordic countries.

Note: In all calculations, we use the weighting from the selected respondent.

4.4 Discussion

The descriptive statistics in the previous chapter reveal that the majority of the individuals with no or weak labour market attachment face two or more employment barriers, while a not-trivial minority face four or more barriers. The simultaneous presence of several barriers is confirmed in the analysis using LCA, which also shows that each of the traditional target groups is very heterogeneous in terms of employment barriers. None of the data-driven groups estimated by LCA consist of more than 50 pct. of any of the traditional target groups, and the general picture is that each of the data-driven target groups, broadly speaking, consists of a diverse composition of the traditional demographic target groups. An implication of this is, for example, that a group of immigrants may have more in common with a group of young people than with other immigrants in terms of composition of employment barriers.

Young people, seniors, immigrants, or persons with disabilities are often used as proxy groupings in policy discussions, assuming that these categories effectively capture distinct sets of employment barriers that can inform policy formulation and implementation (Fernandez et al., 2016). However, it is important to note that being, for example, young or a senior, in and of itself, does not constitute an employment barrier, and the empirical findings in this report demonstrate that relying on broad demographic categories as a shorthand for the unique challenges experienced by individuals with no or weak labour market attachment has its limitations. Regardless of how employment policy initiatives are organised, it is crucial to recognise that experiences about effective interventions for one of the traditional groups, for example seniors, are also considered for other groups, for instance immigrants, with the same combination of barriers. Nevertheless, it is equally essential to acknowledge that the traditional demographic target groups cannot be entirely disregarded, especially when addressing specific barriers. For instance, policy actions aimed at addressing the lack of education among young people will differ from those aimed at addressing the lack of education among seniors. Moreover, specific barriers associated with particular traditional target groups do exist. For example, lack of language skills is a barrier specifically affecting immigrants.

In the next phase of this project, we will assess how current activation and labour support policies in the Nordic countries suit the individuals with weak labour market attachment. Here, a starting point is the findings in the previous report, which identify 24 employment barriers, along with the empirical findings in this report of the prevalence and combination of barriers among individuals with no or weak labour market attachment. The evaluation will be achieved through a combination of extensive literature reviews on the effect of existing labour market measures and qualitative research, including interviews with relevant experts and practitioners.

5. References

Bolvig, I., Jeppesen, T., Kleif, H.B, Østergaard, J., Iversen, A., Broch-Lips, N., Jensen, N.L. & Thodsen, J. (2019). Unge uden job og uddannelse – hvor mange, hvorfra, hvorhen og hvorfor? En kortlægning af de udsatte unge i NEET-gruppen. København: Det Nationale Forsknings- og Analysecenter for Velfærd. Available at: <https://www.vive.dk/media/pure/14561/3641625>

Bredgaard, T. & Shamshiri-Pedersen, D. (2018). Bedre match mellem personer med handicap og arbejdsmarkedet. En litteraturgennemgang. Aalborg: Forskningscenter for Handicap og Beskæftigelse.

Engdahl, M. & Liljeberg, L. (2022). Flyktingar och flyktinganhörigas etablering på arbetsmarknaden i Stockholm, Göteborg och Malmö. Institutet för arbetsmarknads- och utbildningspolitisk utvärdering (IFAU), Rapport 2022:15.

Farchy, E., Immervoll, H. & Pacifico, D. (2020). Faces of Joblessness in Finland. Retrieved from <https://www.oecd.org/els/soc/faces-of-joblessness.htm>

Fernandez, R., Hijzen, A., Pacifico, D. & Thewissen, S. (2020). Identifying and addressing employment barriers in Belgium, Korea and Norway. Retrieved from <https://www.oecd-ilibrary.org/content/paper/925b3c14-en>

Fernandez, R., Immervoll, H., Pacifico, D. & Thévenot, C. (2016). Faces of Joblessness: Characterising Employment Barriers to Inform Policy. Retrieved from https://www.oecd-ilibrary.org/social-issues-migration-health/faces-of-joblessness_5jlwvz47xptj-en

Højbjerg, A., Nielsen, S., Jakobsen, V., Thuesen, F. & Thomsen, R., (2022). Labour market attachment in the Nordic countries. The Nordic Council of Ministers. Retrieved from: <https://pub.norden.org/temanord2023-501/#122815>

Højbjerg, A., Nielsen, S., Jakobsen, V., Thuesen, F., Thomsen, R., Saikku, P., Mesiäislehto, M., Korpi, T., Lorentzen, T. & Hardonk, S. (2023). Barriers to employment for vulnerable groups in the Nordic countries. The Nordic Council of Ministers. Retrieved from: <https://pub.norden.org/temanord2023-513/about-this-publication.html#id09037>

The Nordic Council of Ministers (2022). Programme for the Nordic Council of Ministers' Co-operation on Labour 2022–2024. <https://pub.norden.org/politiknord2022-709/#101446>

Appendix A – Operationalisation of barriers

In this section we further describe how we have operationalized the barriers from the framework over employment barriers in the Nordic countries. The structure of the section follows the four barrier categories from the framework.

BARRIERS RELATED TO INDIVIDUAL CHARACTERISTICS

Physical/mental health issues

One important employment barrier from the is health issues. In general, we have seen a rise in self-reported sickness or disability among the working population in both EU- and OECD-countries, which both can be an objective increase or due to greater awareness or better diagnostics (Fernandez et al., 2016). Irrespective of the reason, health issues do constitute a barrier to the labour market and probably to a greater extent compared to 20 years ago.

This barrier can be operationalized and measured in several ways in EU-SILC. For example, the individuals in the survey are asked about their self-perceived health status, whether they have any chronic health conditions and whether they are limited in daily activities due to on-going physical or mental health problems. Depending on the measure adopted the results can vary considerably. For example, chronic health conditions include hay fever, which to a very little degree affects people's ability to work and therefore this does not capture what we are interested in measuring. What we are interested in measuring are health problems that hamper the individual's ability to do activities that people usually do. Therefore, we follow Fernandez et al. (2016) and define individuals to be facing a health-related barrier if the individual is either limited or strongly limited in daily activities due to an on-going physical or mental health issues. Unfortunately, EU-SILC do not allow us to distinguish between mental and physical health barriers, which could have strengthened the analysis, since the literature (see for example Bredgaard & Shamshiri-Pedersen, 2018) points to the fact that individuals with mental health problems do have the lowest employment and labour force participation rate among persons with disabilities. This indicates that individuals with mental health problems might face other barriers compared to individuals with physical health problems due to for example different perceptions or lack of knowledge about mental health problems compared to physical health problems.

Lack of education

Lack of general skills have been identified as an employment barrier in our framework in various ways and can also be a result of different factors. Lack of skills can be the result of no or very little education, which to some degree limits individuals to participate in today's demanding labour market. A typical way to define no or very little education, which we also adopt in this report, is to define an individual to be facing an educational barrier if the individual has no competence-giving education. We use the question about highest attained education, and if the individual has no more than upper secondary education according to the ISCED-2011 standards the individual is said to face an employment barrier related to lack of education.

No recent experience

Besides lack of education, lack of skills can also be the result of little work experience since work experience enhances and maintains work-related skills (both technical and social) and plays an important role in explaining different labour market outcomes among individuals with the same educational attainment (Fernandez et al., 2016). In EU-SILC experience in the labour market can be measured in a number of ways and we define two barriers related to lacking experience in the labour market.

The first barrier related to experience in the labour market refers to recent experience. If an individual has not worked one month during either the reference year or at the moment the interview took place the individual is said to face lack of recent work experience, since the individual has been out of the labour market for more than one year.

Never worked

The second barrier related to experience in the labour market refers to whether the individual has any work experience. In EU-SILC the respondents are asked whether they have ever worked. Note that this does not include e.g., vacation jobs taken by students, casual jobs undertaken from time to time, etc. If the respondent answer that they have never worked, they face the experience related barrier never worked.

Lack of skills

Lastly, lack of skills can simply be a result of having low work-related skills that to a lesser extent e.g., are demanded in the Nordic labour markets due to for instance automation. The respondents in EU-SILC are asked the skill level of either their current job or their most recent job. The skill level is measured using the ISCO-08-taxonomy, which is an internationally recognized classification system that

categorizes jobs based on the skill level and skill specialization required for the job. We define individuals to be facing this barrier if their most recent job was in one of the lowest two ISCO-08 occupation categories, which refers to *plant and machine operators and assemblers* as well as *elementary occupations*.

Care responsibilities

Care responsibilities is another barrier that are identified as a barrier to participate on the labour market. The level of detail in EU-SILC allows us to construct an indicator, which convincingly can identify individuals who face a barrier related to care responsibilities. We can identify households where children below 13 years old are present and whether these children are enrolled in formal care services (e.g., kindergarten) for at least 30 hours per week. If the children are not in day care for at least 30 hours per week the child needs care at home. Based on this, we define individuals to be facing a barrier related to care responsibilities if a) there is only one potential caregiver in the household, or b) there is more than one potential caregiver, but one of them reports to be inactive or working part-time because of care responsibilities.

BARRIERS RELATED TO ECONOMIC INCENTIVES AND MOTIVATION

High partner or non-labour income

Weak work incentives can arise when income gain from taking up a job or working more is limited, because net wages are low or because generous out-of-work benefits are withdrawn as people start to work. In addition, people may decide to limit their work effort because they have access to other income sources.

A proxy for the latter can be derived straightforwardly from the EU-SILC variable 'gross household income' (which includes pre-tax income from labour and capital plus government transfers) minus own income that depends on the person's own work efforts (i.e., employment income and

earnings-replacement benefits, such as unemployment benefits, of the person of interest) and minus a share, depending on the number of adults in the household, of social transfers awarded at household level (for instance, social assistance or rent allowances). We derive this indicator in equivalised terms to account for differences in household size.

The income independent on own work effort are then used to create two group of individuals using a threshold of 1.6 times the median in the reference population. If an individual has a value above this threshold the individuals are defined to have a high partner or non-labour income.

High earnings replacement (benefits)

Another incentive related barrier that can be derived from EU-SILC is to an approximate measure of the extent of benefit reductions that an individual is likely to experience when taking up full-time employment. To do this, we use the ratio of the amount of earnings-replacement benefits received at the individual level in the numerator, and own potential wage in the denominator.

The amount of earnings-replacement benefits at the individual level is constructed as the sum of individual earning-replacement benefits plus the individual's part in any earnings-replacement benefits received at household level.

The shadow labour income is estimated using a Mincer-equation with the two-step Heckman approach to account for endogenous sample selection. The variables that enter the Mincer-equation are education, age, age squared, gender, health limitations and degree of urbanization. The participation equation uses a number of additional variables including family structure, number of children in the household, household income that are independent on own work effort. The estimated parameters are used to derive estimates of shadow labour incomes.

The resulting variable is discretised into a binary indicator that takes value 1 for ratios equal or higher than 60 pct. In other words, if more than 60 pct. of an individual's potential in-work earnings are "taxed away" when taking up employment the individual is said to face an employment barrier related to high earnings replacement (benefits).

BARRIERS RELATED TO THE EMPLOYERS AND LABOUR MARKET STRUCTURES

Low job opportunities

In the framework over employment barriers one barrier that hinders individuals from participating on the labour market is the lack of local employment opportunities and further the state of the economy can also constitute a barrier for some vulnerable groups. For example, a paper from Sweden shows that differences in the employment structure of the local labour market contributed to differences in the native-refugee employment gap (Engdahl & Liljeberg, 2022).

However, such a variable can be challenging to define at the micro-level, since this variable essentially must describe the availability of vacancies in labour-market segments that are relevant for each individual given their skills, location, age, etc. Following Fernandez et al. (2016), we operationalise this variable by estimating a linear risk of demand-side constraints in labour market segments described by age,

gender and education on long-lasting unemployment and persistent involuntary part-time activity, which to some degree work as proxies for the labour market tightness in a given area. For example, if there are many individuals with specific characteristics who are involuntarily unemployed in an area, it means that individuals with those specific characteristics in that area have a higher probability of being demand side constrained. Note that we use Eurostat's Labour Force Survey in the respective Nordic countries to get the parameters and then we use the parameters to estimate the probability of being demand side constrained for the population in EU-SILC. Those with a risk higher than 1.6 times the median in the reference population is defined as facing the scarce employment opportunity-barrier.

BARRIERS RELATED TO PUBLIC SERVICES

Low contact with public employment services (PES)

In this section we will describe and operationalize barriers related to public employment services. As already mentioned, these barriers relate to how successful the public employment services are towards their clients. For example, vulnerable young people are often in risk of being left out/fall between chairs due to lack of coherence and coordination among the many different institutions involved in assisting the youths (Bolvig et al., 2019)

Variables related to the public employment services can be difficult to identify on the micro-level (which is required to make a meaningful Latent Class Analysis), since the public employment services inherently/typically are founded on the macro-level. For example, 'cream-skimming' (i.e., services prioritizing clients with the best employment prospects) can be the result of limited resources and wrong-designed incentive structures at the national level. On the other hand, cream-skimming could also be the result of a single caseworker maximizing own performance. Neither the reason, it is difficult to identify this sort of barrier in data, but it should still be recognized as an important employment barrier and especially among the most vulnerable on the labour market.

Therefore, we have used questions from Eurostat's Labour Force Survey to form a barrier related to the contact or lack thereof with the public employment services. We have formed a variable that reflects the extent to which job-seeking individuals have been in contact with PES. Job-seeking individuals is asked how they so far have searched for a job and we use the ones related to contact with the public employment services (MethodA and MethodK in LFS) to form a dummy variable for whether job-seeking individuals have been in contact with the public employment services.

Next, we estimate an equation that uses various background characteristics (age, gender, education) to predict the probability of an individual having been in contact with public employment services. If an individual's expected contact with PES is below the 20th percentile, the individual is defined to face a barrier related to low contact with the public employment services (PES).

Appendix B – Further on LCA and model selection

Latent Class Analysis (LCA) is a statistical technique used to identify unobserved or latent subgroups within a population based on observed categorical variables. It is a type of finite mixture modelling that assumes the population consists of several distinct groups, each characterized by a unique pattern of responses or probabilities on the observed variables. It provides a valuable tool for understanding heterogeneity within populations and can help researchers gain insights into the characteristics and behaviour of different subgroups.

The goal of LCA is to assign individuals to the most appropriate latent class based on their patterns of responses to a set of categorical variables, which in this setting is employment barriers. It allows researchers to understand the underlying structure or typology of a population by identifying groups of individuals who share similar response patterns. In other words, it allows us to identify groups of individuals who share similar employment barriers.

LCA assumes that the observed categorical variables (i.e., the employment barriers) are indicators of the latent classes and that the relationship between the latent classes and the observed variables can be captured by probabilities.

The process of conducting LCA involves several steps. First, the number of latent classes needs to be specified based on theoretical considerations and/or model fit criteria. This process is described further below. Then, the model estimates the latent class probabilities and item-response probabilities using maximum likelihood estimation. Once the model is estimated, individuals can be assigned to the most likely latent class based on their response patterns.

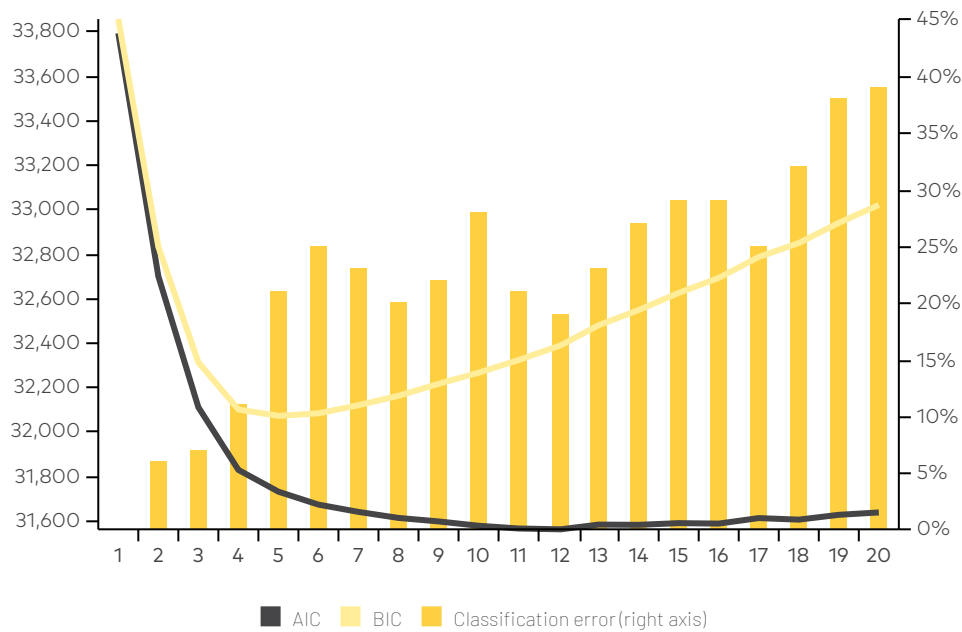
As mentioned above the number of latent classes needs to be specified based on theoretical considerations and/or model fit criteria. We use both strategies to determine the optimal number of groups. The point of departure is a baseline model with the ten identified barriers as the only inputs. We then estimate 20 model with number of groups varying from 1 to 20 groups. Similar to Fernandez et al. (2016), we calculate the Akaike Information Criterion (AIC), the Bayesian Information Criterion (BIC) and the classification error for each model.

In simple terms the AIC and BIC balances the goodness of fit of a model with its complexity (they penalize models for being too complex). The goal is to find a model that fits the data well using the fewest number of parameters. The difference between the two is that BIC places a stronger penalty on model complexity compared to AIC (which is also evident in figure 6.1). If you only rely on model fit criteria, you will select the model with the lowest AIC and BIC since it indicates a better trade-off between model fit and complexity.

The classification error provides further information for the choice of the optimal number of latent classes. This measure summarise how well the model is able to classify individuals into clusters. Basically, when class-membership probabilities are far from 0 or 1 the assignment to classes can seem arbitrary, which is the intuition for the classification error. In general, a lower value signals a better classification of individuals into specific latent classes. Although a certain amount of classification error is natural in latent class analysis, values above 30pct signal that the model is not able to discriminate between classes in the allocation of a significant number of cases.

These statistics are presented in figure 6.1 for the 20 different models. First, the figure shows that the BIC penalizes the model complexity to a larger extent than AIC, which is evident due to the U-shape of the BIC-curve. As the model complexity increases (i.e., when we introduce more latent classes) the BIC starts increasing. The BIC suggest a model with 5 groups, since the BIC-curve has its minimum at a model with 5 classes, whereas the AIC curve almost assumes the same value for a model with 8 classes up until a model with 20 classes, and hence the AIC is not a helpful measure to guide model selection in this case. The model with 5 groups, however, has a slightly higher classification error compared to a model with 8 classes, but still in the adequate range. Nonetheless, compared to previous work in OECD's Faces of Joblessness-project a model with 5 classes seems unusual and therefore we adopt a model with 8 latent classes, since it has a relatively low BIC, AIC, and classification error.

Figure 6.1 AIC, BIC, and classification error in LCA models with varying latent classes



Source: Own calculations based on EU-SILC from the Nordic countries.

Note: In all calculations, we use the weighting from the selected respondent.

It is important to note that model selection in LCA is not an exact science and involves a combination of statistical criteria and substantive judgment. Researchers should consider multiple methods and rely on a combination of statistical fit indices, theoretical considerations, and replication to make an informed decision about the number of latent classes to include in the analysis.

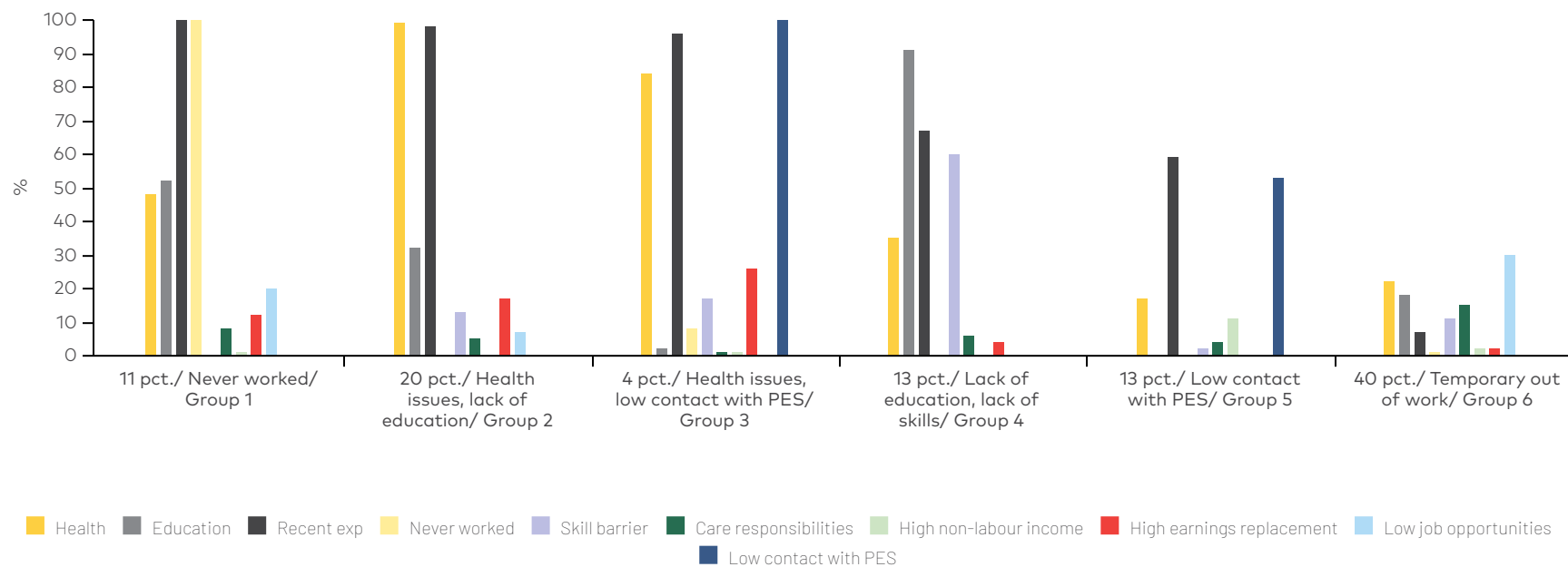
Appendix C – Sensitivity checks

In the previous section we saw how we determined the number of classes in the Latent Class Analysis. In this section we will do some informal test of the sensitivity of the model with 8 groups (latent classes). We do so by estimating a model with 6 groups and compare it to the model with 8 groups. Our results are robust if we do not see any major differences between the model with 8 groups and the model with 6 groups.

Figure 6.2 presents the model comprising six distinct groups. The figure visually represents the identified groups, depicting the prevalence of each barrier within each group, the respective group sizes, and the designated names we have assigned to them. From the figure we see a great overlap compared to the model with 8 classes, which was presented in chapter 4.

First, in the LCA with 6 groups we also identify a group where everyone faces the barrier never worked, whereas we in the LCA with 8 groups identified two groups who has never worked. In the LCA with 6 groups it consists of 11 pct. of the individuals with no or weak labour market attachment, whereas the size of the two groups in the LCA with 8 groups who has never worked is 6 pct. and 5 pct. respectively. This suggests that the group who has never worked in the LCA with 6 groups is divided into two groups in the LCA with 8 groups; one consisting of individuals whose primary barrier is the fact that they have never worked, and one with individuals who have never worked but who also lack education.

Figure 6.2 Latent Class Analysis estimated with 6 latent classes



Source: Own calculations based on EU-SILC from the Nordic countries.

Note: In all calculations, we use the weighting from the selected respondent.

Second, in both models we identify a group of individuals who struggle with health issues and have low contact with PES and in both models these groups consist of 4 pct. of the individuals with no or weak labour market attachment in the Nordic countries. Similarly, we find a group of approximately the same size in both models consisting of individuals whose primary barriers is lack of education and lack of skills. This is the general finding between the two models i.e., groups identified in one model is possible to find in the other model.

In general, this suggests that our preferred LCA with 8 groups is relatively stable when it comes to changing the number of classes. It will per definition change something in the output when you vary the number of groups, but as just demonstrated above the differences are minor between the two models.

About this publication

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