

FACES OF JOBLESSNESS IN IRELAND: ANATOMY OF EMPLOYMENT BARRIERS

James Browne and Daniele Pacifico



Faces of Joblessness in Ireland

Anatomy of Employment Barriers

Faces of Joblessness in Ireland

Anatomy of Employment Barriers

Project team:

James Browne, Rodrigo Fernandez, Herwig Immervoll, Dirk Neumann,
Daniele Pacifico, Céline Thévenot

Version October 2016 - via www.oecd.org/social/faces-of-joblessness.htm

This work is published on the responsibility of the Director of the OECD Directorate for Employment, Labour and Social Affairs. The opinions expressed and arguments employed herein do not necessarily reflect the official views of the Organisation or of the governments of its member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

© OECD 2016

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of the source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to rights@oecd.org. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at info@copyright.com or the Centre français d'exploitation du droit de copie (CFC) at contact@cfcopies.com.

TABLE OF CONTENTS

1. INTRODUCTION	7
2. LABOUR MARKET AND SOCIAL CONTEXT	10
3. EMPLOYMENT BARRIERS IN IRELAND	15
4. FACES OF JOBLESSNESS IN IRELAND.....	19
5. CONCLUSIONS	26
REFERENCES	28
ANNEX A LATENT CLASS RESULTS	30
ANNEX B LATENT CLASS ANALYSIS AND MODEL SELECTION	32

Tables

Table 2.0. % of people at risk of poverty or social exclusion, 2014.....	12
Table 3.1. % of people facing different employment barriers	17
Table A1.1. Latent class estimates	30
Table A1.2. Characterisation of the latent groups	30

Figures

Figure 2.1. Employment rates change, 2007=100	10
Figure 2.0. Dynamics of population groups with potential labour market difficulties	14
Figure 2.3. Composition of the Irish population with labour market difficulties	14
Figure 3.1. Employment Barrier – Conceptual framework.....	15
Figure 3.2. Share of individuals facing increasing numbers of employment barriers	18
Figure 4.1. Shares of individuals facing multiple employment barriers	25
Figure A2.1. Selection of the optimal number of latent classes	33

Boxes

Box 2.1. Population groups experiencing potential labour market difficulties (target population)	13
Box 4.1. Group 1: “Part-time workers with few apparent employment obstacles”	19
Box 4.2. Group 2: “Labour-market inactive men with health limitations”	20
Box 4.3. Group 3: “Older labour-market inactive women with limited work experience”	20
Box 4.4. Group 4: “Long-term unemployed men with scarce job opportunities”	21
Box 4.5. Group 5: “Mothers with limited work experience and care responsibilities”	21
Box 4.6. Group 6: “Parents with higher-income partners and care responsibilities”	22
Box 4.7. Group 7: “Unemployed youth without any past work experience”	22
Box 4.8. Group 8: “Unemployed men with scarce job opportunities and weak financial work incentives”	23
Box 4.9. Group 9: “Experienced well-off early retirees with weak financial work incentives”	23
Box 4.10. Group 10: “Economically vulnerable parents without any past work experience and care responsibilities”	24
Box 4.11. Group 11: “Older women with low education, health limitations and no past work experience”	24

ACKNOWLEDGEMENTS

This document was produced with the financial assistance of the European Union Programme for Employment and Social Innovation “EaSI” (2014-2020, EC-OECD grant agreement VS/2016/0005, DI150038). It is part of a joint project between EC and OECD (VS/2016/0005 (DI150038), *Cooperation with the OECD on Assessing Activating and Enabling Benefits and Services in the EU*) covering six countries: Estonia, Ireland, Italy, Lithuania, Portugal and Spain.

The report incorporates feedback received during the project kick-off seminar, held at OECD in Paris on 3 March 2016 with the participation of the EC and representatives from all participating countries. Lead authors gratefully acknowledge contributions from colleagues at the OECD (Rodrigo Fernandez, Herwig Immervoll, Dirk Neumann, Céline Thévenot), as well as comments from colleagues at the World Bank (Aylin Isik-Dikmelik, Sandor Karacsony, Natalia Millan, Mirey Ovadiya, Frieda Vandeninden, Michele Davide Zini), who are undertaking a parallel and closely related joint project with the EC covering six further EU Member States. All views and any errors in this report are the responsibility of the authors. In particular, the report should not be reported as representing the official views of the OECD, of the European Union, or of their member countries.



This project is co-funded by the European Union

FACES OF JOBLESSNESS IN IRELAND

ANATOMY OF EMPLOYMENT BARRIERS

1. INTRODUCTION

This Profile Analysis Note (PAN) for Ireland assesses the characteristics and employment barriers of working-age individuals with no or weak labour-market attachment. It is one of six such country notes in a joint EC-OECD project covering Estonia, Ireland, Italy, Lithuania, Portugal and Spain. The objective of this project is to provide a novel perspective on employment difficulties, and to aid the identification of policy approaches to overcome them. The project website at <http://www.oecd.org/social/faces-of-joblessness.htm> provides further information.

Each PAN develops profiles of key employment barriers and quantifies their incidence and intensity among jobless individuals and among those who work very little or intermittently. The statistical approach is described in an associated methodological background paper (Fernandez et al., 2016; Immervoll and Isik-Dikmelik, 2016) and is consistent with that employed in a related EC-World Bank activity covering six further EU countries. The empirical results from each PAN will be used to inform a dialogue on policy approaches and options that could address the most prevalent employment barriers in selected population groups and strengthen their labour-market attachment. This dialogue will take place in a second part of the EC-OECD project. Its results and an associated policy inventory will be presented in a series of six Country Policy Papers (CPP).

A key motivation behind this project is the finding from the literature on activation and employment-support policies (AESPs), and on social protection systems more generally, that careful targeting and tailoring to individual circumstances are crucial factors for policy success.¹ However, policy discussions do not necessarily reflect this. They often refer to broader labour-market groups such as “young people”, “older workers”, “people with disabilities” or “lone parents”. Similarities of employment barriers among members of such broader groups is implicitly assumed but not well documented (for instance, being “young” is not an employment barrier). As a result, policy interventions targeted on the basis of characteristics such as age, health status or family situation alone may be ill-adapted to the needs of jobless individuals and those with precarious employment patterns. An in-depth inventory of people’s employment barriers, and an identification of groups who share similar combinations of labour-market obstacles, can contribute to a better match between individual needs and available support, and make associated policy interventions more effective and less costly.

Countries frequently seek to account for individual circumstances and labour-market difficulties by means of powerful statistical tools that “profile” individual benefit claimants using administrative data. Such tools are useful for tailoring the employment programmes that each registered individual is offered. But these tools often rely on administrative data, which have distinct advantages but tend to cover only a subset of the non-working population, such as the registered unemployed. As a result, the profiling tools built around these data typically cannot be used to provide a broader perspective on the employment barriers facing the entire population of those with no or weak labour market attachment. This note

1. See for example OECD (2013a, 2013b, 2014a, 2015a); Immervoll and Scarpetta (2012); Arias et al. (2014); World Bank (2013); European Commission (EC) (2015); Eurofound (2012).

complements existing profiling instruments by adopting more of a “birds-eye” approach that considers the employment barriers of *all those with no or weak labour market* attachment. This sizeable and heterogeneous group constitutes the potential client group for AESPs. Understanding their employment barriers is not only important for linking up services provided by different institutions, but it is also essential for identifying groups who would benefit from employment-related programmes or incentives, who are not currently clients of any of the institutions providing such measures.

A comprehensive assessment of potential employment barriers requires detailed information on people’s skills, work history, health status, household circumstances and incomes. The European Union Survey on Income and Living Conditions (EU-SILC) contains rich information in many of these domains and is the primary source of data for this note. EU-SILC offers cross-country comparability, a longer *reference period*² than alternative household surveys over which one can assess the respondents’ main activity status, and detailed information on individual and family circumstances including people’s work-related skills end education, work history, health status, income sources, tax liabilities and benefit amounts. However, there is a relatively long time-lag between data collection and availability (SILC 2014 was distributed in February 2016). Furthermore, the SILC is not specifically designed as a labour force survey and hence does not have the same level of detailed information on labour force status as specialist labour force surveys. There have also been concerns in Ireland around the sampling methodology for the SILC as rates of household joblessness recorded by the SILC are significantly higher than in other surveys (Watson et al., 2015).

This note focuses on the 47% of the *working age population*³ in Ireland who, according to SILC data for 2014, can be considered to face potential labour-market difficulties. This group is referred to as the “target population”. Of this 47%, 32% did not work *at all* throughout the reference period⁴ and a further 14% had “weak labour market attachment” with either unstable jobs, limited working hours or zero or near-zero earnings. For them, potential employment barriers that are particularly common include no *recent* work experience (70% of the target population), limited *total past* work experience (48%) and low skills (43%). Health limitations, care responsibilities and high levels of non-labour income are important for some sub-groups, but less prevalent overall.

The results of the statistical clustering analysis suggest that the target population can be separated into 11 distinct groups with similar employment-barrier profiles. Focusing on the prevailing characteristics in each group, the emerging clusters may be summarised as follows:

1. “Part-time workers with few apparent employment obstacles” (17% of those with no or weak labour market attachment)
2. “Labour-market inactive men with health limitations” (14%)
3. “Older labour-market inactive women with limited work experience” (14%)
4. “Long-term unemployed men with scarce job opportunities” (10%)
5. “Mothers with limited work experience and care responsibilities” (10%)
6. “Parents with higher-income partners and care responsibilities” (9%)
7. “Unemployed youth without any past work experience” (8%)

2. SILC data on labour-market status is derived from 13 identical questions referring to different time periods. Twelve of them relate to each month of the income reference period (the calendar year *before* the interview) and an additional question refers to the moment of the interview. The *reference period* in this note uses all 13 data points. It begins with the first month of the income reference period and finishes at the moment of the interview.

3. Ages 18 to 64, excluding individuals in full-time education or compulsory military service.

4. This can be compared with the average proportion of working-age people who were not in paid work during 2013 (the reference year for the 2014 SILC) of 39% from the EU Labour Force Survey. It is expected that this figure would be higher, however, as some people were only out of work for a portion of the year, so the figures are not necessarily inconsistent.

8. “Unemployed men with scarce job opportunities and weak financial work incentives” (6%)
9. “Experienced well-off early retirees with weak financial work incentives” (5%)
10. “Economically vulnerable parents without any past work experience and care responsibilities” (4%)
11. “Older women with low education, health limitations and no past work experience” (3%)

These group labels indicate that proxy groupings, which are commonly referred to in the policy debate, such as “women”, “mothers”, “youth”, or “older workers” include distinct sub-groups with very different employment-barrier profiles. For instance, several distinct combinations of employment barriers are common for women with children: care responsibilities and relatively low work experience (Group 5), care responsibilities and high levels of income from other sources (Group 6) and care responsibilities, low skills and no paid work experience at all (Group 10). These groups differ also differ in their poverty risks and material deprivation levels.

In most groups a significant proportion of individuals face more than one potential employment barrier simultaneously. More than two thirds face *at least two* such barriers simultaneously, and about one in three face *three or more*. For instance, most of the “economically vulnerable parents without any past work experience” (Group 10) combine low skills, care responsibilities, no previous work history and scarce job opportunities, and a majority of “older women without any past work experience” (Group 11) face health limitations, low skills, no past work experience and scarce job opportunities. For individuals with multiple significant barriers, addressing one type of employment obstacle may not be enough to boost employment levels in these groups. From a policy perspective, the results point to a need to carefully sequence different activation and employment support measures, and to co-ordinate them across policy domains and institutions.

This note proceeds as follows. Section 2 provides some background information on the evolution of social and labour market conditions in Ireland and how this compares with the other five countries studied in the project, and with the EU average. Section 3 uses the most recent EU-SILC data to provide quantitative measures for different types of employment barriers and their incidence among individuals with no or weak labour-market attachment. Section 4 applies a statistical clustering technique to organise this population into relatively homogeneous groups with similar combinations of employment barriers. It also presents key demographic and socio-economic characteristics for each group. A short concluding section highlights selected directions for further extending the approach.

2. LABOUR MARKET AND SOCIAL CONTEXT

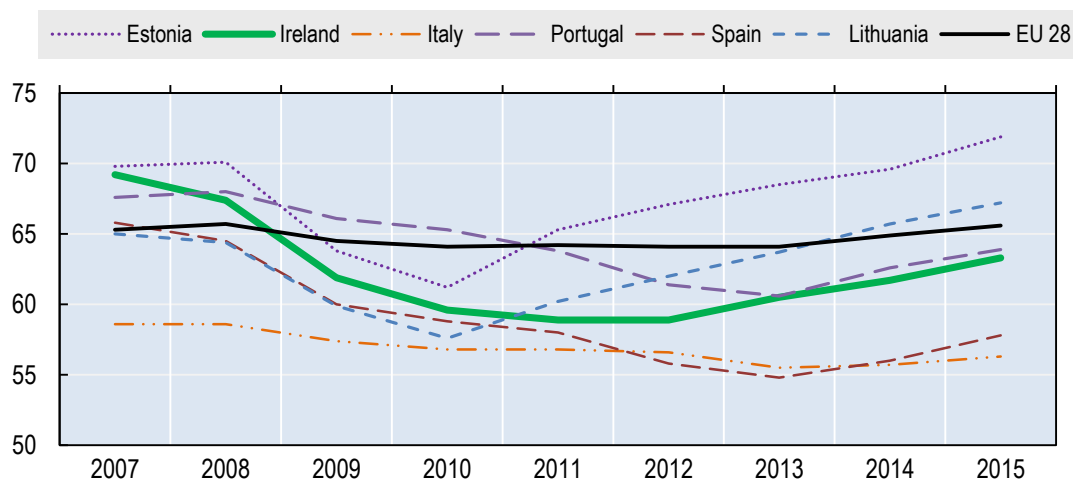
In Ireland as well as in the five other countries covered by this project, the economic crisis has significantly impacted labour markets, in turn causing increased poverty and material deprivation. The impact of the crisis was severe and the labour market has yet to fully recover.

Figure 2.1 shows the change employment rates in the six countries between 2007 and 2015 and compares these with the EU average. Ireland had a relatively high employment rate before the crisis (above the EU average and higher than the other countries studied in this project apart from Estonia) but was among the worst-affected countries in the immediate post-crisis period from 2008 to 2010: the employment rate fell by 8 ppts over these two years and only began to recover in 2013. This was two years later than in the Baltic States but a year earlier than in Spain and Portugal. Recovery was comparatively slow and in 2015 the employment rate in Ireland was still considerably below its pre-crisis peak, and below the EU average. Both unemployment and inactivity rates have risen over this period, with the labour force participation rate 2.6 percentage points (ppts) lower in 2015 than it had been in 2007.

Long-term unemployment has also risen considerably during the crisis: in 2015, 5.3% of those aged 15-74 had been unemployed for at least a year, lower than its peak of 9% in 2012 and 7.8% in 2013 but still higher than its 2007 level of 1.7%.⁵ In 2015, 56% of the unemployed had been out of work for more than a year, a higher percentage than the EU average but lower than in Italy and Portugal. A key reason behind this has been the collapse of the construction boom in Ireland, which has led to workers in this sector having difficulties transferring to other forms of employment (European Commission, 2016). Partly in response, the Irish Government has introduced the JobPath programme in which private providers will be involved in the provision of AESPs to the long-term unemployed.

Figure 2.1. Employment rates: steady recovery now well established

In % of working age population, 2007=100



Source: Eurostat Labour Force Statistics.

As in other countries, employment rates are higher in Ireland for men than women and for those aged 25-55 than those aged under 25 or over 55. The gender employment gap for those aged 20-64 was 12.5 ppts in 2015, slightly above the EU average. Reasons behind this include the high cost of childcare in Ireland – the amount paid by parents is among the highest in all OECD countries as a percentage of the

5. Source: Eurostat Labour Force Statistics.

average wage (see OECD, 2015b) – and income-replacement benefits given to non-working families with children, which are then withdrawn rapidly when parents move into work, creating weak financial work incentives for those with children. These factors are particularly acute for lone parents, and contribute to Ireland’s very low lone-parent employment rate (51% in 2015 compared to the EU average of 70%).⁶ Ireland operates an in-work benefit for families with children called the Family Income Supplement, which strengthens the incentive for families with children to have someone in paid work. But this too is withdrawn rapidly as income rises, creating weak incentives for working families to increase their earnings, including by having both parents in paid work rather than just one.

The proportion of people aged 15-24 who are not in employment, education or training (NEET) has fallen in recent years, though it remains above pre-crisis levels and exceeds the EU average (European Commission, 2016).⁷ The recent reduction has been driven largely by a sharp fall in the youth unemployment rate. The Irish Government is implementing the EU Youth Guarantee programme, which aims to give all unemployed young people an offer of either work or training or some combination of the two. It also recently introduced a subsidy to employers who offer a job to a young person who has been unemployed for at least four months, called JobPlus Youth.

Labour market participation among older people is also relatively low in Ireland. Compared to younger cohorts, older people tend to have significantly lower levels of education, and the 45-65 age group fared poorly in the OECD’s Survey of Adult Skills (OECD, 2013). Recent reforms put in place by the Irish Government have put in place programmes for training the long-term unemployed (“Springboard” and “Momentum”).

The gap in employment rates between those with and without tertiary education is particularly large in Ireland (OECD, 2015c). Skills shortages for highly educated workers, particularly in the ICT sector, have been noted in recent OECD and EC country reviews (OECD, 2015b; European Commission, 2016). New types of apprenticeship, which had previously only been common in the construction sector, are being developed.

Migration is an important feature of the Irish labour market: both the proportion of the population that was born abroad and (particularly) the proportion of native-born people living abroad are high relative to other EU and OECD countries (OECD, 2015b, 2015d). Until recently, immigrants had higher employment rates than natives, though this is no longer the case. Immigrants living in Ireland are relatively well educated, but also more likely to be over-qualified for their jobs than natives.

Incidence of economic hardship

Although overall employment rates in Ireland are not especially low (see Figure 2.1), worklessness is more heavily concentrated at the household level than in other countries. The proportion of adults living in households with very low work intensity is therefore much higher than the EU average, and the highest of the six countries studied in this project. Correspondingly, the proportion of the working-age population that

6. *Source:* Eurostat Labour Force Statistics.

7. Note however that there are concerns around the measurement of NEETs in Ireland. Not having attended education or training in the previous four weeks is one of the conditions for being classified as NEET. However, many education courses have breaks of more than four weeks (e.g. over the summer), meaning that students are classified as NEET if they are interviewed during periods when they are not attending courses, assuming that they are not doing paid work at that time. In Ireland, it appears that more than 40% of those who are classified as NEET and economically inactive also report being students, suggesting that not all of those classified as NEET should be considered as potential targets for AESPs. Partly for this reason, the analysis in Sections 3 and 4 excludes those who report their labour market status as being students from the reference population, so these students who are classified as NEETs are not included in any of the groups described in Section 4.

is at risk of poverty or social exclusion (AROPE) is also relatively high in Ireland, above the EU average, although lower than in Spain. Income poverty and material deprivation rates, however, are low: even though many of those who do not work live in workless households, the relatively high level and targeted nature of income-replacement benefits in Ireland is effective at reducing poverty risks. Low tax burdens and in-work support given to low earners lead to low poverty rates among those in paid work, including for part-time workers.

Table 2.1. Risk of poverty or social exclusion

2014, in % of people aged 16-64

	Ireland	Estonia	Italy	Lithuania	Portugal	Spain	EU28
People at risk of poverty or social exclusion	29	25	29	26	28	32	25
People at risk of poverty							
All	17	20	20	18	19	23	17
Not working	31	36	31	35	32	36	31
Working	6	12	11	8	11	13	10
full-time	3	11	10	7	9	10	8
part-time	11	20	17	24	31	23	16
Households without children	15	25	16	18	16	16	15
Households with children	16	18	24	20	23	28	19
People living in households with severe material deprivation ⁽¹⁾							
All	9	6	12	12	10	8	9
Households without children	6	7	10	16	10	6	8
Households with children	10	5	13	12	11	9	10
People living in households with very low work intensity ⁽²⁾	21	8	13	9	13	18	12

1. Individuals aged 18-64.

2. Individuals aged 18-59.

Source: Eurostat (EU-SILC 2014).

Target groups for activation and employment-support policies

Individuals with labour-market difficulties frequently move between non-employment and different states of “precarious” employment. As a result, limiting attention to “snapshots” of non-employed (or underemployed) individuals in a specific point in time, such as those in Figure 2.1 based on labour force surveys, may not capture the true extent of labour-market difficulties or the need for policy intervention. In line with the potential scope of AESPs, the **target population** of the analysis in this note includes working-age individuals who are *persistently out of work* (either unemployed or labour-market inactive for more than 12 consecutive months) as well as individuals whose labour-market attachment is “weak”.⁸ “Weak” labour-market attachment can include individuals with *unstable jobs* working only sporadically, those working with *restricted working hours*, and those with *very low earnings* (due to, for example, working informally or in very low productivity self-employment). Box 2.1 defines the sub-groups of this population and explains how they are identified using the EU-SILC data. The target population is a sub-set of the reference population of working-age adults relevant for AESPs. The **reference population**, in turn, is defined as all working-age adults except for full-time students and those in compulsory military service

8. This paper does not attempt to distinguish between voluntary and involuntary joblessness or reduced work intensity. Individuals can of course choose to be out of work, or in part-time or part-year employment, voluntarily, and some surveys ask respondents whether they “want to work”. However, those saying they do not want employment, or prefer to work part-time or part-year, may do so as a result of employment barriers they face, such as care obligations or weak financial incentives, which policy might potentially address. If extended voluntary labour-market inactivity or underemployment creates or exacerbate certain types of employment barriers, it may subsequently give rise to involuntary labour-market detachment or partial employment in later periods.

as these groups are typically outside the scope of AESPs. For simplicity, the rest of this note also refers to this reference group as the “working-age population”.

The choice of target population is deliberately *broad*, moving beyond traditional clients of AESPs such as the unemployed, and including those who may “choose” not to work, or to engage in part-time, occasional or informal employment. The reason for including these groups is that they may choose to do so *because* of employment barriers they face. Clearly, not everybody experiencing potential labour market difficulties may be an intended target for AESPs; ultimately, the scope of employment support policies is ultimately a choice for policymakers. The choice of target population adopted in this note is therefore not intended to be *prescriptive* about the appropriate scope of AESPs; instead, it seeks to inform policy decisions by documenting the employment barriers and circumstances of individuals with no or weak labour market attachment. The approach is thus *descriptive* and takes no position on whether policy intervention is justified for specific groups. The resulting profiles of employment barriers are intended to facilitate discussions of the strengths and limitations of different policy interventions for concrete groups of individuals. They can also be used to help inform decisions on whether to channel additional policy efforts towards specific priority groups.

Box 2.1. Population groups experiencing potential labour market difficulties (target population)

The target population in this note includes those who are persistently out-of-work, as well as those with weak labour-market attachment.

The **persistently out-of-work** population (*long-term unemployed* or *inactive*) includes individuals reporting no employment activity throughout the *reference period*. The reference period corresponds to 12 consecutive monthly observations in the *income reference year* (January-December of year T-1) plus one additional observation at the *moment of the interview* (in year T).

The group with **weak labour market attachment** refers to individuals reporting employment activity during the *reference period* matching any of the following three situations:

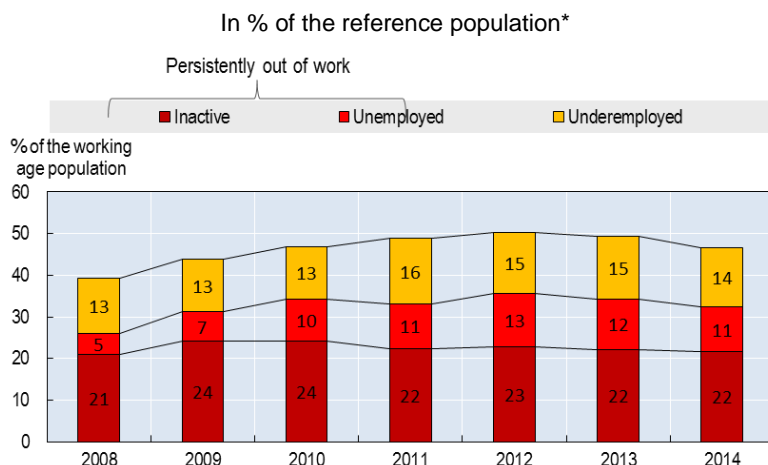
- i) **Unstable jobs:** individuals working only a limited number of months throughout the reference period. The threshold is equivalent to Eurostat’s low-work-intensity measure: Above zero but no more than 45% of potential working time in the income reference year. To reconcile information reported for the income reference period and at the moment of the interview the following individuals are also considered in this group: 1) Workers who report no work activity during the income reference period but who are working at the moment of the interview and, 2) workers with between 45% and 50% of work activity during the income reference period who do not report any work activity in either the last month of the income reference period or at the moment of the interview.
- ii) **Restricted hours:** workers who spent most or all of the reference period working *20 hours or less* a week. However, individuals working 20 hours or less who are not likely to have additional work capacity, e.g. due to ongoing education or training, are excluded.
- iii) **Near-zero earnings:** individuals reporting some work activity during the income reference period but negative, zero or *near-zero* monthly earnings.² In addition to possible classification error, situations included in this group could signal potential labour market difficulties, such as underpayment and/or informal activities.

1. The 20-hours threshold is approximately in-line with the 45% “part-year” threshold that identifies the group with unstable jobs. For a 40-hours working week in a full-time job, 45% of full-time would correspond to 18 hours a week. However, in SILC, the distribution of working hours in the main job shows a high degree of bunching at 10, 15, 20 and 25 hours a week. As the closest multiple of 5, a value of 20 hours was therefore chosen.
2. The near-zero earnings threshold is set in Ireland at EUR 150/month. This value corresponds broadly to the 1st percentile of the SILC earnings distribution.

Figure 2.2 shows the *evolution* of the target population in Ireland between 2007 and 2013 (SILC survey years 2008 and 2014). Despite the major definitional differences, the resulting patterns are similar to the trends based on LFS data shown earlier in Figure 2.1. Economic inactivity, long-term unemployment and underemployment all rose between 2007 and 2011 (SILC years 2008 and 2012) and then fell slightly in 2012 and 2013 (SILC years 2013 and 2014).

Figure 2.3 shows the composition of the target population in SILC 2014. Of the 70% who were out of work throughout the entire reference period, the most frequently reported status was “domestic tasks” (25% of the target population). 23% reported being unemployed, and 13% reported that they were unfit to work. The “underemployed” are split fairly evenly between those who spent part of the year not in paid work and those who worked part-time throughout the year. A relatively small number of those in paid work reported “near-zero” earnings.

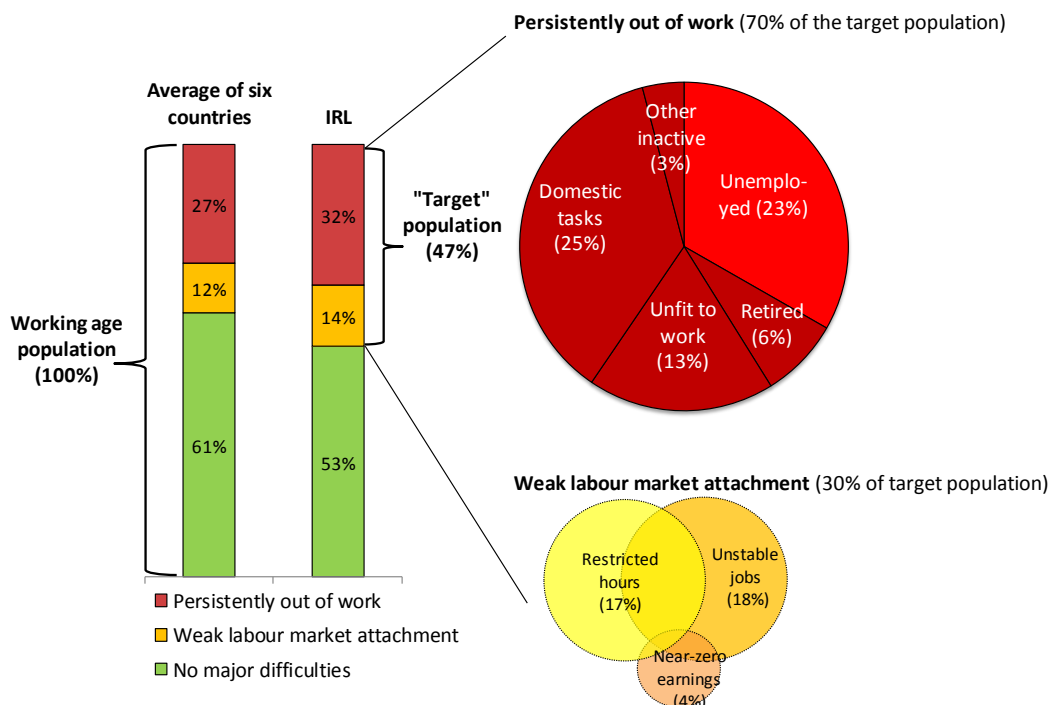
Figure 2.2. Dynamics of population groups with potential labour market difficulties



Note: The working age population includes all individuals aged 18-64 except for full-time students and those in compulsory military service. See Box 2.1 for the definitions of the three groups.

Source: Calculations based on EU-SILC 2008-2014.

Figure 2.3. Composition of the Irish population with labour market difficulties



Note: The six-country average is unweighted.

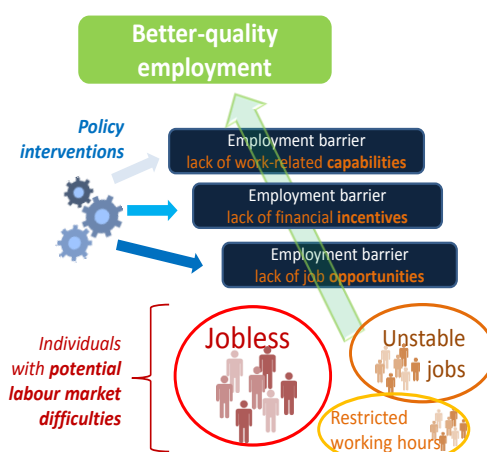
Source: Calculations based on EU-SILC 2014. See Box 2.1 for the definitions of the three groups.

3. EMPLOYMENT BARRIERS IN IRELAND

Working age individuals with no or weak labour-market attachment may face a number of employment barriers that prevent them from fully engaging in employment activities (Table 3.1). A thorough understanding of these barriers is a pre-requisite for designing and implementing policy interventions in a way that is well-targeted and suitably adapted to the circumstances of different policy clients. Following Immervoll and Scarpetta (2012), this note examines three types of employment barrier, namely:

- **Insufficient work-related capabilities**, e.g. a lack of skills, work experience, care responsibilities and health-related limitations;
- **Lack of financial work incentive to look for a “good” job**, e.g., because of low potential pay, relatively generous out-of-work benefits, or access to high levels of income independent of their own work effort;
- **Scarce job opportunities**, e.g., a shortage of vacancies in the relevant labour-market segment, frictions in the labour market due to information asymmetries, or discrimination in the workplace.

Figure 3.1. Employment barriers: conceptual framework



Source: Fernandez et al. (2016).

The employment barriers outlined above cannot all be measured directly. To operationalise the concepts, this note implements a set of workable indicators under each of the three main categories. Fernandez et al. (2016) provides a fuller discussion of the indicators and their rationale, including descriptive statistics for selected countries. The indicators used are as follows:

- **Capability, item 1. “Low” skills:** if an individual has low professional skills (their most recent job was in the lowest two categories of the ISCO-08 classification system).⁹ Those who demonstrate high skills by having a tertiary degree are assumed not to face this employment

9. This indicator is different from that in Fernandez et al. (2016), which classifies individuals who have achieved less than upper secondary education as facing an employment barrier. The reason is that many individuals in the Irish labour force have an upper-secondary degree which is often combined with occupations at “low” skills content.

barrier even if their most recent job was low-skilled. If an individual has no work experience *at all*, they are also included in the “low skills” group.

- **Capability, item 2.** Two measures of work experience:
 - **No recent work experience:** if an individual did not work at all during the reference period (i.e., without any employment for at least 12 months).
 - **“Low” relative total work experience:** the indicator takes one of three values: 1 for those who have *no past work experience at all*, 2 for those who have *some* work experience but have worked *less than 60%* of the time since they left full-time education, and 3 otherwise (i.e., if their total work experience is not “low”).
- **Capability, item 3. Health limitations:** If an individual reports some or severe long-standing physical or mental limitations in daily activities.
- **Capability, item 4. Care responsibilities:** if an individual has a family member who requires care¹⁰ and if he or she is either *the only* potential care giver in the household, or the only person in the household who is labour-market inactive or working part time *because of care responsibilities*.
- **Incentives, item 1. “High” non-labour income:** if the household’s income excluding that relating to the work efforts of the individual in question,¹¹ adjusted for household size, is more than 1.6 times the median value in the reference population.
- **Incentives, item 2. “High” earnings replacement benefits:** if earnings-replacement benefits are more than 60% of an individual’s estimated potential earnings in work.¹²
- **Opportunity, item 1. Scarce job opportunities:** if an individual has a “high” risk of not finding a job despite active job-search and willingness to take up employment during most of the income reference period (*at least* sevenmonths) and until the moment of the SILC interview (inclusive). The risk is estimated with a regression model including region, age group, gender and education as independent variables (see Fernandez et al., 2016 for more details). Individuals with an estimated risk of more than 1.6 times the median value in the working-age population are considered to face “scarce” job opportunities. Scarce job opportunities do not only indicate a barrier to employment in the short term, but if jobseekers become discouraged and stop active job search, it could lead to further problems in the longer run.

Table 3.1 shows the share of individuals in the *target* and the broader *reference* population who appear to be facing employment barriers according to the above definitions. As expected, those in the target population are significantly more likely to face each employment barrier. In almost all cases, each barrier is also more prevalent among those who were out of work throughout the entire reference period than for those with weak labour-market attachment. Common barriers include limited past work experience and low skills. These are all faced by at least a third of the target population. A special case is the “no recent work experience” barrier, which not only acts as a potential employment obstacle but also is a direct result of the way the target population is defined: by definition, those who were persistently out of work did not work at all during the reference period. As a result, 100% of this group are shown as facing “no recent work activity” as a potential barrier.

-
10. Family members assumed to require care are children under the age of 12 receiving less than 30 hours of non-parental childcare a week and adults reporting severe limitations in daily activities due to their health and being economically inactive throughout the reference period (and in the case of those of working age, that permanent disability is the reason for their inactivity).
11. This includes both earnings, individual-level earnings replacement benefits and the individual’s share of household-level earnings replacement benefits.
12. Potential earnings are estimated in SILC with a regression model corrected for sample selection. See Fernandez et al. (2016) for details.

The other employment barriers – health limitations, care responsibilities and high levels of non-labour income or earnings replacement benefits – are also fairly prevalent among the target population. This is in line with the earlier breakdowns in Section 2: “Domestic tasks”, which includes caring for children or adults, is the most common status among the “persistently out of work” group; and a significant proportion reported being unfit to work. In view of Ireland’s comprehensive financial support for those out of work, it may also not be surprising to see that many in the target population receive earnings replacement benefits that are “high” relative to people’s earnings capacity.

The “high levels of non-labour income” barrier is the only one that is less prevalent among those who are underemployed than those who are persistently out of work. Possible explanations for this pattern include the relatively large number of workless households in Ireland, making it less likely that those out of work could draw on significant incomes from a partner or spouse. By contrast, the majority of those who work part time (53%) live with a full-time worker and thus have an income source that is not directly related to their own work efforts.

In practice, people’s individual and family circumstances are complex and often lead to situations where they face multiple employment barriers simultaneously. Figure 3.1 shows that there are roughly equal-sized groups facing one barrier, two barriers and three barriers, with smaller groups facing no barriers or four or more. The next section uses a statistical clustering technique to examine which combinations of barriers are most common in the target population.

Table 3.1. Employment-barrier indicators
% of population facing different types of barrier

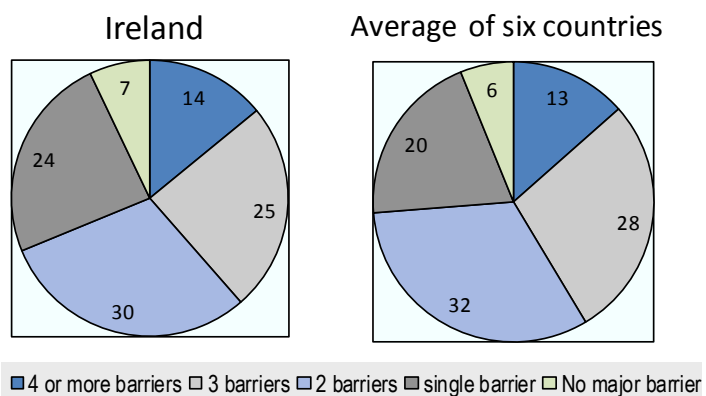
	Reference population	Target population		
		All	Persistently out of work	Underemployed
Insufficient work-related capabilities				
"Low" skills	29	43	47	32
Health limitations	15	25	31	10
Care responsibilities	12	25	26	22
No work experience at all	7	16	22	0
Positive but "low" relative work experience	25	36	40	28
No recent work activity	32	70	100	0
Lack of financial work incentives				
"High" non-labour income	32	25	22	32
"High" earnings replacements	11	19	21	15
Scarce job opportunities				
Scarce job opportunities	15	31	39	14

Note: See text for definitions and thresholds.

Source: Calculations based on EU-SILC 2014.

Figure 3.2. Number of simultaneous barriers

% of target population



Note: The six-country average is unweighted.

Source: Calculations based on EU-SILC 2014.

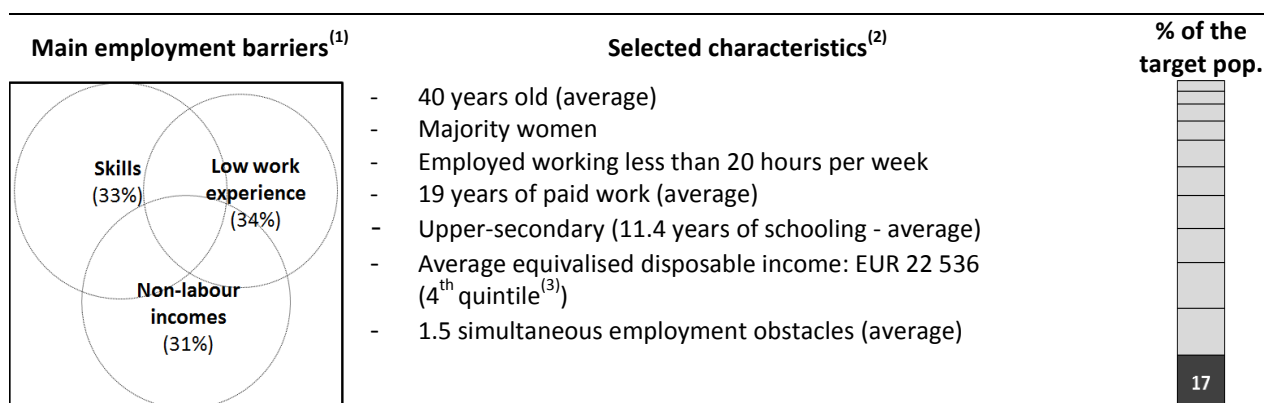
4. FACES OF JOBLESSNESS IN IRELAND

This section applies the method described in Fernandez et al. (2016) to *segment* the target population into groups of individuals with *similar combinations* of employment barriers. Using the 2014 SILC data for Ireland the segmentation process leads to the identification of **11 groups** of individuals with no or low labour market attachment (the “target population”).

The following paragraphs describe each group in detail. At the end of each paragraph a box reports a Venn diagram showing extent and degree of overlap of the main barriers characterising the group, as well as a list of selected individual and household characteristics with a “high” probability of occurrence within the group. Together, this information can help in attaching suitable labels (“*faces*”) to group members, although the labels are necessarily arbitrary to some extent and cannot substitute for careful examination of the comprehensive list of employment barriers and socio-economic characteristics, as reported in Annex Tables A.1 and A.2.

Group 1 (17% of the target population): “Part-time workers with few apparent employment obstacles”. Most people in this group are employed (86%) working less than 20 hours per week. Average disposable income is higher than in most of the other groups and education levels are comparatively high (80% have upper secondary or higher). The average number of simultaneous barriers (1.5) is the lowest among the 11 groups – 50% face no more than one barrier and 25% do not face any of the barriers covered in this note. The three most common barriers to full-time employment are low *work experience* (34%), low professional *skills* (33%) and weak work *incentives* resulting from high levels of household income that are not related to their own work effort (31%).

Box 4.1. Group 1: “Part-time workers with few apparent employment obstacles”



1. Surface areas of shapes in the diagram are proportional to the number of group members facing the related barrier (“Proportional Venn Diagrams”). The outer square represents the group size (100%). The diagram shows the three most prevalent barriers in the group and is based on the indicators discussed in Section 2. An exception is the *recent* work experience indicator. Although this indicator is included in the numerical results in Annex Table A.1, it is not shown in the diagrams as its high prevalence (due to the strong two-way causal link with the other barriers) would dominate all other barriers in the graphical representation in all but two groups.

2. Characteristics that distinguish this group from other groups, i.e., categories that have a high probability of occurring in the group. Table A.2 reports individual and household characteristics in more detail.

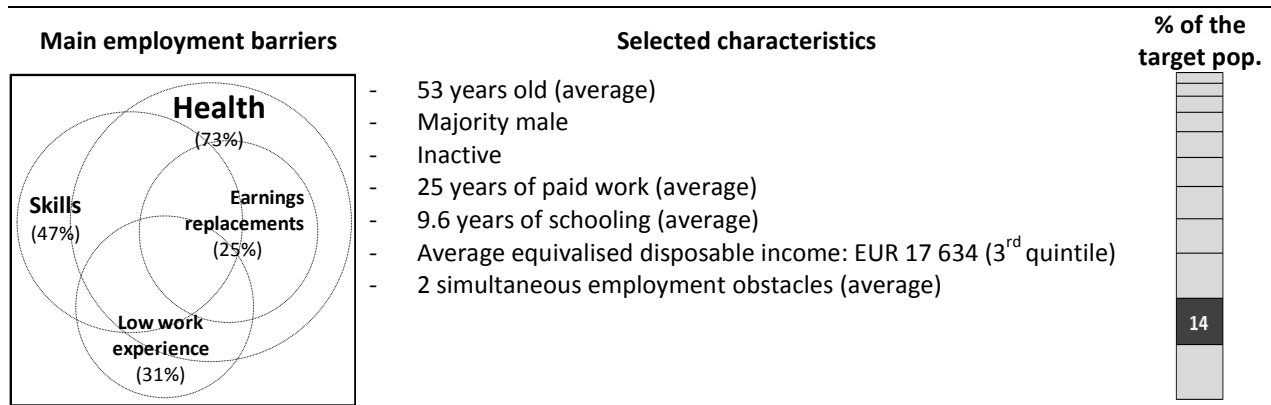
3. Income quintiles are calculated for the entire national population.

Source: Calculations based on EU-SILC 2014, see Annex Tables A.1 and A.2 for full results.

Group 2 (14% of the target population): “Labour-market inactive men with health limitations”. The majority of the group is inactive (77%) with almost half (46%) reporting a permanent disability as the main reason for being out of work. The most common barrier to employment is a long-standing physical or mental *health limitation* (73%) with 31% suffering from *severe* health issues. In addition to poor health, 47% of individuals have low *skills*, 31% have low overall past *work experience* and 91% have no recent work activity. One quarter of the group may also face weak financial *incentives* as a result of social

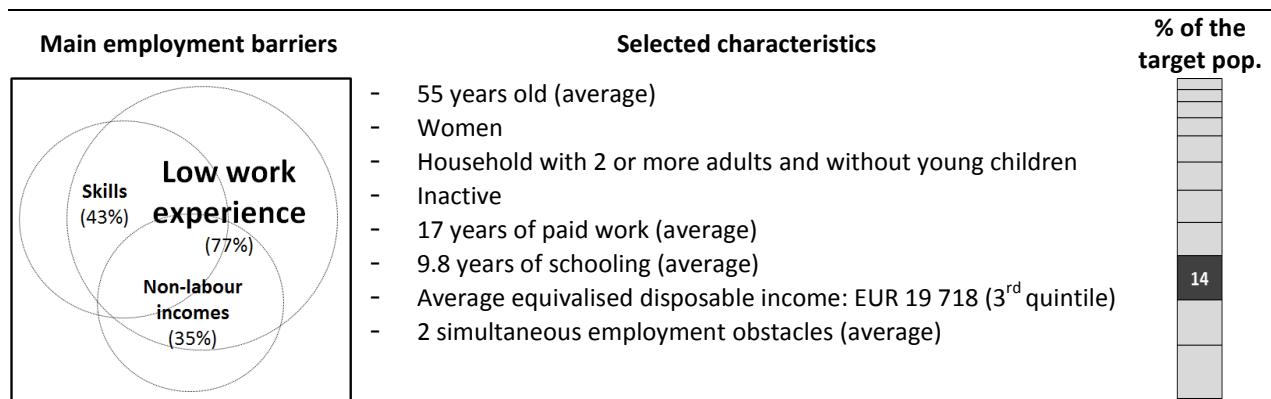
benefits being high relative to potential in-work earnings. Receipt of both income-replacement and additional-cost benefits are common in this group: 56% of this group receive sickness and disability benefits (100% among those reporting a long-standing health limitation), 45% receive family benefits and 41% receive housing benefits.

Box 4.2. Group 2: “Labour-market inactive men with health limitations”



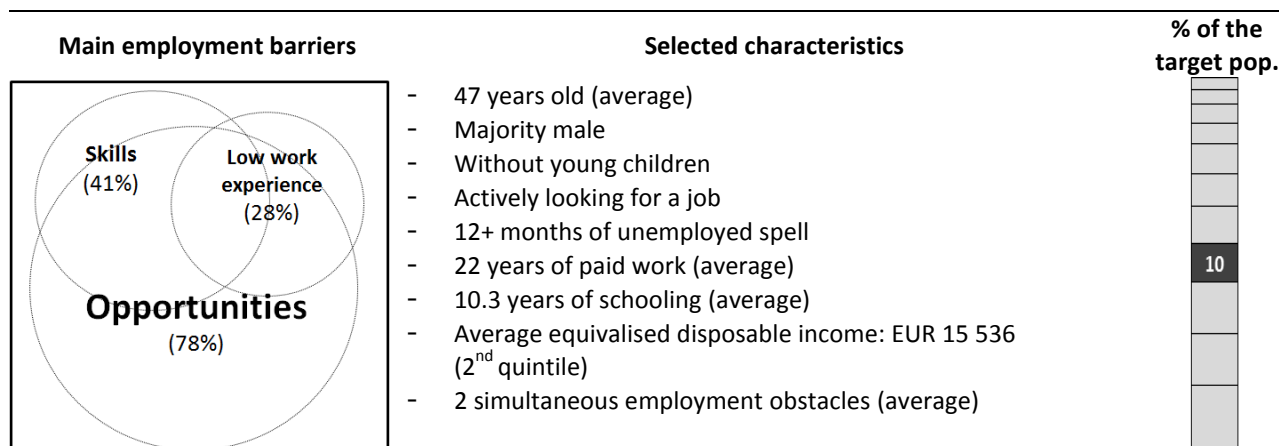
Group 3 (14% of the target population): “Older labour-market inactive women with limited work experience”. This group is composed of women who are largely inactive (83%). At just under one third, the share of migrants in this group is substantially higher than in most other groups. 77% have worked before but with low overall *work experience* relative to their potential experience (the average person in this group is 55 years old with 17 years of paid work experience). 43% have low *skills* with 86% having low-skilled jobs. Although receipt of generous benefits is not common among this group, work *incentives* can be limited due to other incomes in the household: 51% live in households where at least one other person has employment and earnings, and for 35%, the level of income sources which are not related to the own work is particularly high (i.e. more than 1.6 times the median value in the reference population adjusted for household size).

Box 4.3. Group 3: “Older labour-market inactive women with limited work experience”



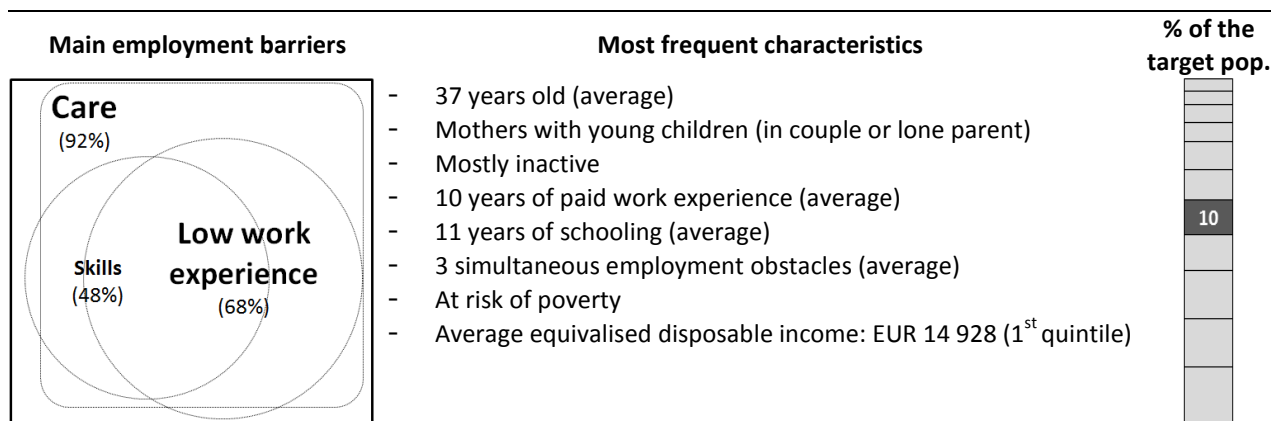
Group 4 (10% of the target population): “Long-term unemployed men with scarce job opportunities”. 79% of this group are men of (later) prime age (average age 47). Almost all are persistently out of work, with 77% unemployed. Among the unemployed, the average length of unemployment has been over 12 months. The most common employment barrier is an overall lack of *job opportunities* (indicated as a possible barrier for 78% of the group). Past employment was mostly in low or medium-skilled jobs – 30% had jobs fitting into the occupational categories of “elementary occupations” according to the ISCO classification, while 20% were craft or machinery operators and assemblers. Considering the high shares of these occupations in the construction sector, it is perhaps not surprising that many group members face scarce job opportunities. With 22 years of paid work on average, more than one fourth of group members (28%) have also low *work experience* relative to their age and education level.

Box 4.4. Group 4: “Long-term unemployed men with scarce job opportunities”



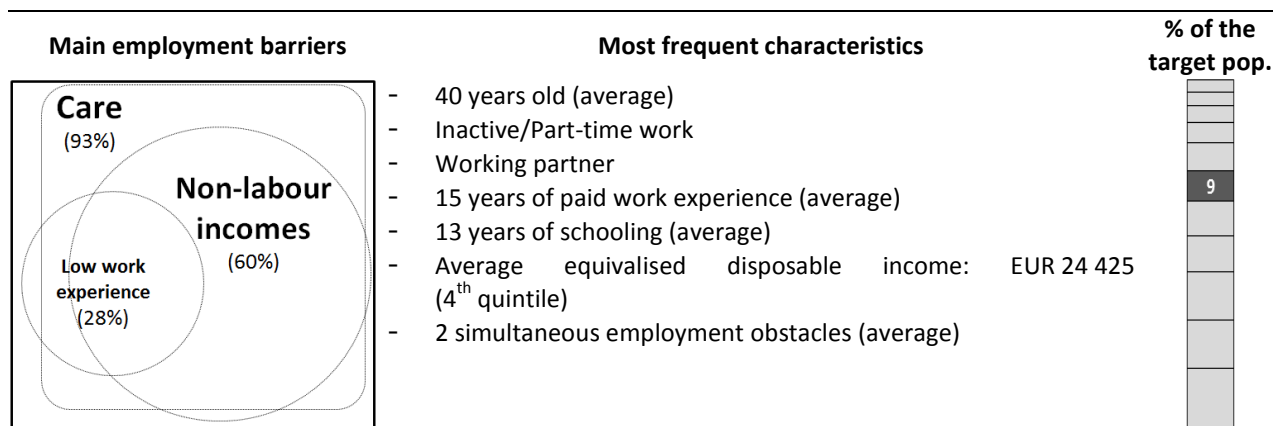
Group 5 (10% of the target population): “Mothers with limited work experience and care responsibilities”. This group consists entirely of women with children. Most of them are labour-market inactive doing housework (67%), while a minority are employed part-time (14%) or unemployed looking for a job (14%). They face multiple simultaneous employment obstacles (Figure 4.1), namely *care responsibilities* (92%), low relative *work experience* (68%) and low work-related *skills* (48%). 35% receive family (and housing) related benefits that are high relative to potential in-work earnings, and could weaken their *incentives* to look for or take up a job. 79% do not have a recent employment record. On average, women in this group have two young children and the youngest is five years old. 27% of the group are lone mothers, 64% live with a partner and 8% live in households with at least two other adults.

Box 4.5. Group 5: “Mothers with limited work experience and care responsibilities”



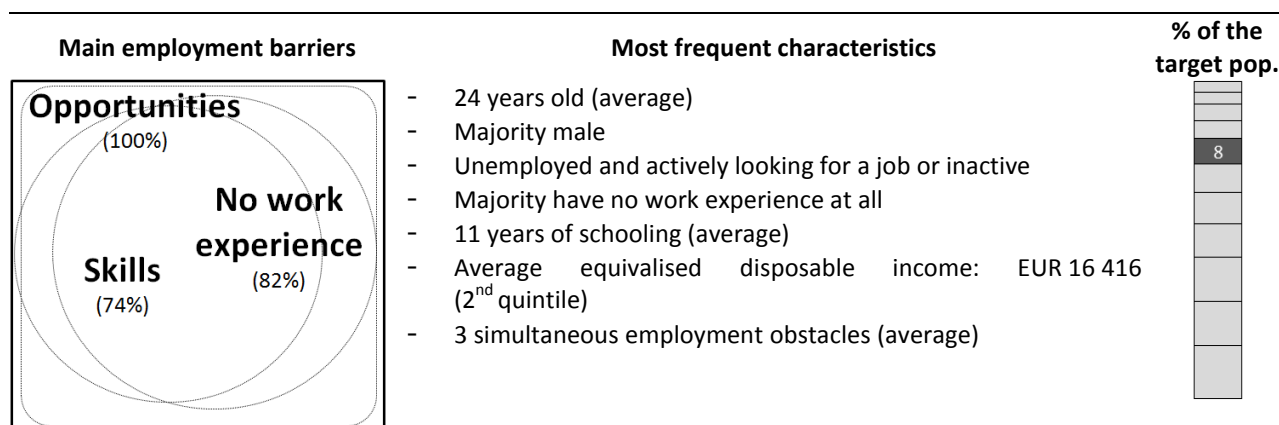
Group 6 (9% of the target population): “Parents with higher-income partners and care responsibilities”. The majority of the individuals in this group are prime age (95%) women (84%) living in families with a working partner and their young children. 54% are inactive, 38% employed part-time and 7% unemployed. Members of this group have on average two young children with the youngest being five years old. Like the “*Mothers with limited work experience and care responsibilities*” (Group 5), almost all (93%) of these parents have *care responsibilities*. In addition to care responsibilities, the most common potential barriers are limited financial work *incentives* resulting from relatively high levels of other income sources in the household (60% of group members can draw on such incomes), and low *work experience* relative to their potential experience (28%). Although ages and number of children are similar in Groups 5 and 6, there are important differences. Individuals in Group 6 have much higher disposable incomes (EUR 24 425 in equivalent terms, vs EUR 14 928 in Group 5), are better educated (62% have tertiary education vs 23% in Group 5), more likely to be employed (38% vs 14%) and to have mid-to-high skilled jobs (38% vs 12%).

Box 4.6. Group 6: “Parents with higher-income partners and care responsibilities”



Group 7 (8% of the target population): “Unemployed youth without any past work experience”. This group is characterised by young (93% aged under 30) men (66%) who are mostly either unemployed (69%) or inactive (24%). Important barriers are scarce *job opportunities* (100%), *low skills* (74% face this barrier) and lack of any past *work experience* (82%). The low level of employability characterising this group is consistent with the particularly high unemployment rate among Irish young men with no professional skills. It also suggests risks that a significant share of these youth may become discouraged and exit the labour force. 58% of this group live with their parents, 31% are at risk of poverty and 44% face material deprivations (with half of those being *severe* deprivations). With low labour demand a likely barrier for all group members, three or more simultaneous obstacles are very common (see Figure 4.1).

Box 4.7. Group 7: “Unemployed youth without any past work experience”



Group 8 (6% of the target population): “Unemployed men with scarce job opportunities and weak financial work incentives”. This group consists of men (91%) living in a couple (84%) with young children (100%). Their partners, when also part of the target population, are often included in Group 5, the “*Mothers with limited work experience and care responsibilities*”. The majority has been unemployed for most of the reference period and 94% face a high risk of scarce *job opportunities*. Differently from Group 4 “*Long term unemployed men with scarce job opportunities*” individuals in Group 8 face much stronger work disincentives (48% vs 10% in Group 4). Other common barriers characterising this group are limited *work experience* (35%) and *low skills* (36%). With an average equivalent disposable income of EUR 14 474/year this is the second poorest group, with 55% experiencing material deprivation.

Box 4.8. Group 8: “Unemployed men with scarce job opportunities and weak financial work incentives”

Main employment barriers	Most frequent characteristics	% of the target pop.
	<ul style="list-style-type: none"> - 39 years old (average) - Majority male - Couple with young children - Unemployed (11 months, average) - Mid to low professional skills - 16 years of paid work experience (average) - 11 years of schooling (average) - Age of youngest child: 5 years (average) - Average equivalised disposable income: EUR 14 474 (2nd quintile) - 2 simultaneous employment obstacles 	

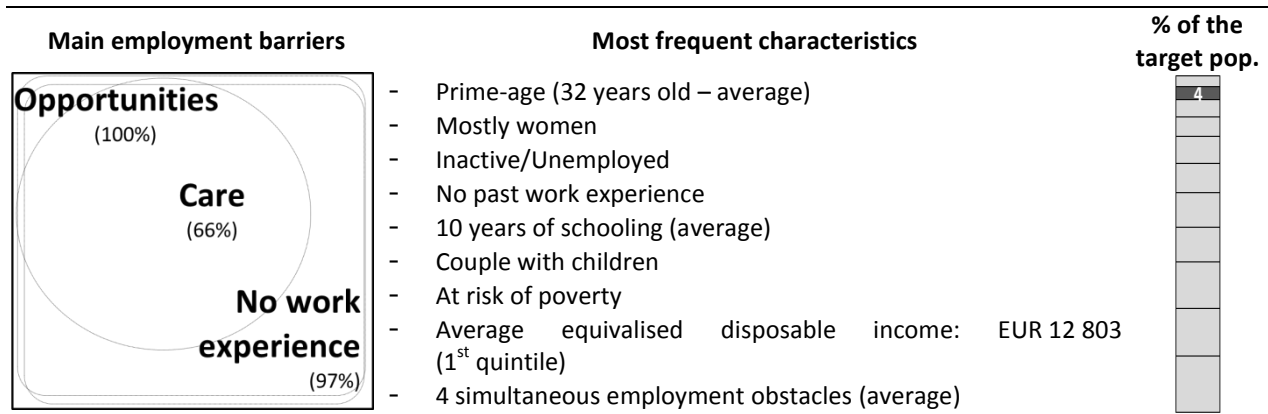
Group 9 (5% of the target population): “Experienced well-off early retirees with weak financial work incentives”. Most people in this group (85%) are aged 55 or over (average age 57 years), and have at least an upper-secondary degree (71%). They have lengthy paid work experience (37 years on average) and have the highest disposable income of all groups: EUR 29 146/year on average in equivalent terms. They are largely labour-market inactive (78%) with 48% reporting to be retired and 20% unfit to work. Many of them (70%) are entitled to high levels of *earnings replacements* benefits, mostly old age and disability benefits. 30% suffer from long-standing physical and mental *health limitations*, with 16% reporting a severe condition. 28% live in households with high levels of income from other sources, such as a partner’s earnings or private pension, which further weakens financial incentives to undertake paid work.

Box 4.9. Group 9: “Experienced well-off early retirees with weak financial work incentives”

Main employment barriers	Most frequent characteristics	% of the target pop.
	<ul style="list-style-type: none"> - 57 years old (average) - Majority male - Retired/Inactive - 37 years of paid experience - Tertiary degree (12 years of schooling – average) - Households with 2 or more adults without children - Average equivalised disposable income: EUR 29 146 (4th quintile) - 2 simultaneous employment obstacles (average) 	

Group 10 (4% of the target population): “Economically vulnerable parents without any past work experience and care responsibilities”. This group consists of mainly women (85%) with children (100%) who all (100%) face high risks of scarce *job opportunities*. Most of this group either live with a partner or more than one other adult in the household. Most of this group face multiple simultaneous employment barriers, the most common additional barriers being *care responsibilities* (66%) and no past *work experience at all* (97%). On average, women in this group have two young children and the youngest is four years old. The group is the poorest of the 11 groups, with 58% of individuals in the bottom quintile of the income distribution and 66% facing material deprivations. This is also the group with the largest proportion of migrants (37%).

Box 4.10. Group 10: “Economically vulnerable parents without any past work experience and care responsibilities”



Group 11 (3% of the target population): “Older women with low education, health limitations and no past work experience”. Individuals in this group are mostly older (average age 50) women (83%). They are frequently labour-market inactive (80%) without any past *work experience* (98%), and with low education levels (40% primary, 26% lower secondary). In addition, 55% report also *health limitations* (16% *severe*). The share of group members with four or more simultaneous employment barriers is the highest of all groups (see Figure 4.1). Considering the extent and overlap of these barriers it is perhaps not surprising that these individuals would face also scarce *job opportunities* if they were to seek employment.

Box 4.11. Group 11: “Older women with low education, health limitations and no past work experience”

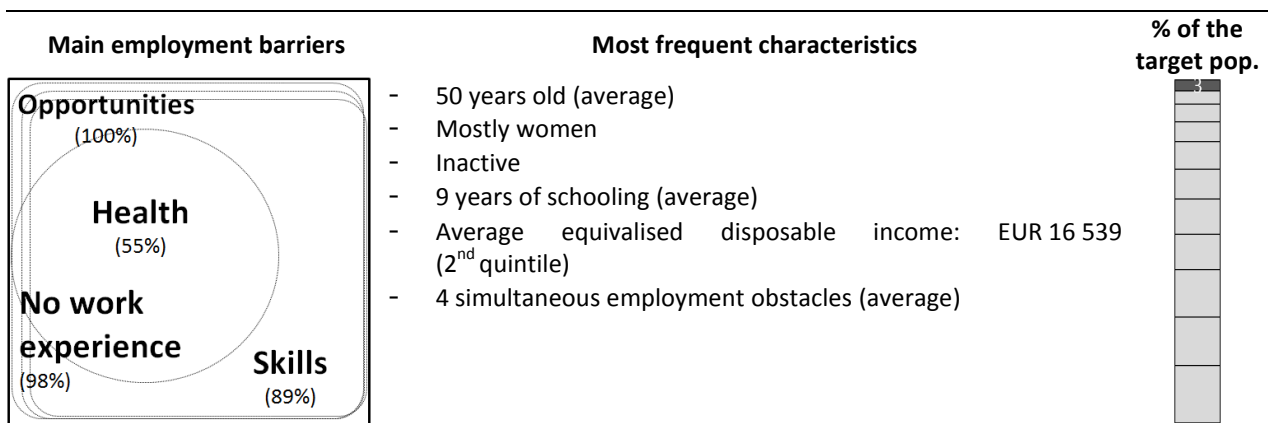
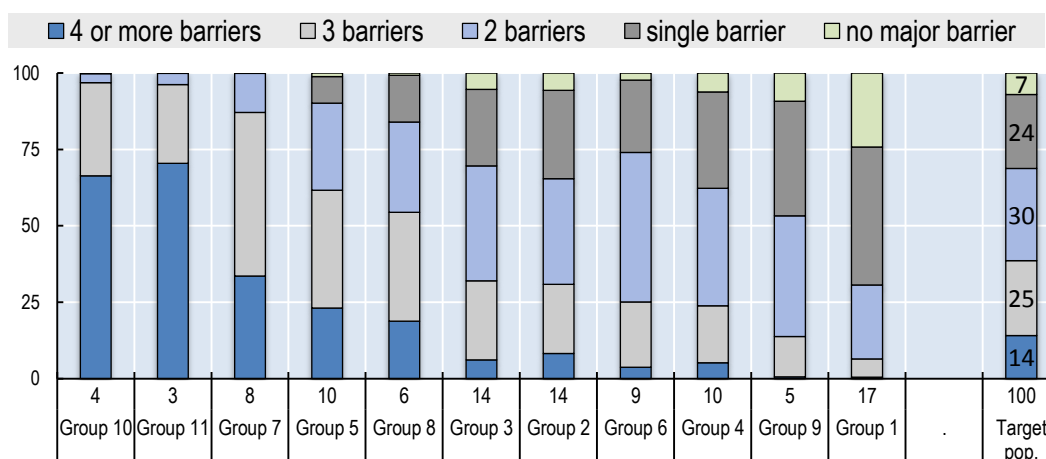


Figure 4.1. Share of individuals facing multiple employment barriers in each group

In descending order of shares facing at least three barriers



Note: Group sizes are reported on the horizontal axis. See Box 2.1 to Box 2.11 for details. Groups are as follows: 1.“Part-time workers with few apparent employment obstacles”, 2.“Labour-market inactive men with health limitations”, 3.“Older labour-market inactive women with limited work experience”, 4.“Long-term unemployed men with scarce job opportunities”, 5.“Mothers with limited work experience and care responsibilities”, 6.“Parents with higher-income partners and care responsibilities”, 7.“Unemployed youth without any past work experience”, 8.“Unemployed men with scarce job opportunities weak financial work incentives”, 9.“Experienced well-off early retirees with weak financial work incentives”, 10.“Economically vulnerable parents without any past work experience and care responsibilities”, 11.“Older women without any past work experience, low education and health limitations”.

Source: Calculations based on EU-SILC 2014.

5. CONCLUSIONS

This note has used a novel method for identifying, analysing and visualising the most common employment barrier profiles characterising the Irish population with potential labour market difficulties. The underlying premise is that out-of-work individuals (unemployed and inactive) and workers with weak labour market attachment face a number of possible employment obstacles, and each of them may call for different policy responses. The success of activation and employment-support policies (AESPs), and of social protection measures more generally, is expected to hinge on effective strategies to target and tailor policy interventions to these barriers and to individual circumstances.

The segmentation method used in this note has uncovered patterns that can provide concrete guidance for policy design and targeting strategies in Ireland. Results show that “short-hand” groupings that are often referred to in the policy debate, such as “youth”, “women”, “unemployed”, are far from homogeneous, and may distract attention from the specific employment obstacles that policies seek to address. Indeed, some of these categories include several distinct sub-groups with very different combinations of employment barriers.

For example, the statistical clustering has identified three quite different groups of economically inactive parents (most of whom are mothers) that are likely to respond to policies in different ways. One group is characterised by high levels of household incomes and no other barriers to employment other than the need to care for children. Stronger financial work incentives and more childcare provision may encourage some members of this group to engage in the labour market. By contrast, the second group of parents live in much poorer households, have lower skill levels and relatively little work experience. The third group faces more severe barriers to employment, having never been in paid work at all, much lower levels of education and skills and are thus predicted to face few job opportunities. Financial incentives such as in-work support and affordable childcare may be effective for the second group, but a longer-term approach to addressing employment barriers including active labour market policies to tackle skills deficits is likely to be necessary for the third.

The statistical clustering also identifies two different groups of people with work-limiting health conditions. Both groups are relatively old, but one has lengthy, though not recent, work experience whereas the other is a group of women who have never been in paid work, have low levels of education and skills and are predicted to have limited job opportunities. In view of these different characteristics, a uniform approach to those with health problems would likely be inappropriate.

Similarly, the statistical clustering has identified two groups of older people facing different employment barriers. One group has substantial amounts of earnings-replacement benefits (generally early retirement pensions) and has no recent work experience but otherwise face no other obstacles. The other group has much lower levels of work experience and are also have lower levels of education and skills. Again, these differences suggest scope for employing quite different policy approaches for different groups of older working-age people.

Although the clustering results do not in themselves say which groups should be the focus for AESPs, they may highlight priority groups for policy interventions. For instance, very high poverty risks, a large number of young people or a strong over-representation of women in some groups may signal a need to review whether existing targeting strategies meet governments’ social cohesion objectives. A high poverty risk combined with weak work incentives may call for caution in applying benefit sanctions (such as for some individuals in Group 8). By contrast, groups with relatively high incomes and financial disincentives caused by high levels of income replacement benefits (such as Group 9) may indicate scope for targeted benefit reductions or for tightening benefit eligibility conditions.

Likewise, information on the intensity and number of barriers faced by individuals can inform difficult policy decisions involving trade-offs between helping those in greatest need and targeting those who are likely to be the most responsive to policy interventions. For example, it is debatable whether resources should be channelled primarily to those with severe or multiple barriers who are, in some sense, furthest from obtaining or holding a stable job or to groups with moderate employment difficulties, for whom policy interventions may have a greater probability of success.

A forthcoming Country Policy Paper to be produced as part of this project will take stock of existing policy measures for some of the groups identified here. Based on that policy inventory, it will seek to analyse whether they are well-aligned with the employment barriers identified in this paper.

REFERENCES

- Arias, O.S., C. Sánchez-Páramo, M.E. Dávalos, I. Santos, E.R. Tiongson, C. Grun, N. de Andrade Falcão, G. Saiovici and C.A. Cancho (2014), *Back to Work: Growing with Jobs in Europe and Central Asia*, World Bank, Washington, DC, Doi: 10.1596/978-0-8213-9910-1.
- Collins, L.M. and S.T. Lanza (2013), *Latent Class and Latent Transition Analysis: With Applications in the Social, Behavioral, and Health Sciences*, Vol. 718, John Wiley & Sons.
- Eurofound (2012), “NEETS - Young People Not in Employment, Education or Training: Characteristics, Costs and Policy Responses in Europe”, Publications Office of the European Union, Luxembourg.
- European Commission (2016), “Employment and Social Developments in Europe”.
- European Commission (2015), “Upskilling Unemployed Adults (aged 25 to 64): The Organisation, Profiling and Targeting of Training Provision”, Publications Office of the European Union, Luxembourg.
- Fernandez, R., H. Immervoll, D. Pacifico and C. Thévenot (2016), “Faces of Joblessness. Characterising Employment Barriers to Inform Policy”, Forthcoming SEM Working Paper, OECD, Paris.
- Immervoll, H. and A. Isik-Dikmelik (2016), “Cooperation with the OECD on Assessing Activating and Enabling Benefits and Services in the EU: OECD-World Bank Joint Methodological Report”, unpublished report submitted to the European Commission, March.
- Immervoll, H. and S. Scarpetta (2012), “Activation and Employment Support Policies in OECD Countries. An Overview of Current Approaches”, *IZA Journal of Labor Policy*, Vol. 1(1), pp. 1-20.
- OECD (2016), *Getting Skills Right: Assessing and Anticipating Changing Skill Needs*, OECD Publishing, Paris.
- OECD (2015a), “Activation Policies for More Inclusive Labour Markets”, in *OECD Employment Outlook 2015*, OECD Publishing, Paris, http://dx.doi.org/10.1787/empl_outlook-2015-7-en.
- OECD (2015b), *OECD Economic Surveys: Ireland 2015*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eco_surveys-irl-2015-en.
- OECD (2015c), *Education at a Glance: OECD Indicators*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/19991487>.
- OECD (2015d), *International Migration Outlook 2015*, OECD Publishing, Paris.
- OECD (2014a), “The Crisis and its Aftermath: A ‘Stress Test’ for Societies and for Social Policies”, *Society at a Glance: OECD Indicators*, OECD Publishing, Paris.
- OECD (2013a), “Activation Strategies for Stronger and More Inclusive Labour Markets in G20 Countries: Key Policy Challenges and Good Practices”, G20 Task Force on Employment, Report prepared for the G20 Summit in St. Petersburg, July, <http://www.oecd.org/g20>.
- OECD (2013b), “Activating Jobseekers: Lessons from Seven OECD Countries”, in *OECD Employment Outlook 2013*, OECD Publishing, Paris, http://dx.doi.org/10.1787/empl_outlook-2013-7-en.

OECD (2013c), *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264204256-en>.

Schwarz, G.E. (1978), “Estimating the Dimension of a Model”, *Annals of Statistics*, Vol. 6(2), pp. 461-464, Doi:10.1214/aos/1176344136.

Vermunt J. K. and J. Magidson (2016), *Technical Guide for Latent GOLD 5.1: Basic, Advanced, and Syntax*, Statistical Innovations Inc., Belmont, MA.

Watson, D., B. Maître and H. Russell (2015), “Technical Paper on the Measurement of Household Joblessness in SILC and QNHS, 2004-2012: An Analysis of the CSO Survey on Income and Living Conditions (SILC) and the Quarterly National Household Survey (QNHS)”, *ESRI Social Inclusion Technical Paper No. 6*, <https://www.esri.ie/publications/technical-paper-on-the-measurement-of-household-joblessness-in-silc-and-qnhs-2004-2012-an-analysis-of-the-cso-survey-on-income-and-living-conditions-silc-and-the-quarterly-national-household-surve/>.

ANNEX A LATENT CLASS RESULTS

Using the 2014 SILC data for Ireland, the segmentation algorithm outlined in Annex B leads to a model with **11 groups**. Table A.1 shows the estimated parameters, i.e. the *share* of individuals facing the employment barriers in each latent group and the related *group size* in the target population (first row). Groups are ordered by size; colour shadings are used to highlight barriers with higher (dark blue) and lower (light blue) frequencies in each group.

Table A.1. Latent class estimates

Percentage of individuals with selected characteristics, by group

	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10	Group 11	Target Pop
<i>Group Size (Target population=100)</i>	17	14	14	10	10	9	8	6	5	4	3	100
"Low" skills	33	47	43	41	48	8	74	36	8	86	89	43
Health limitations	6	73	34	12	13	6	14	11	30	15	55	25
Care responsibilities	2	5	8	6	92	93	1	28	3	66	7	25
No work experience at all	0	0	0	0	5	1	83	0	16	97	98	16
Positive but "low" relative work experience	31	31	78	28	68	28	17	35	0	0	2	36
No recent work activity	0	91	87	87	79	52	91	72	85	100	100	70
"High" non-labour income	31	18	35	12	9	60	24	9	28	6	25	25
"High" earnings replacements	10	25	5	10	35	3	16	48	70	25	9	19
Scarce job opportunities	5	0	1	78	9	3	100	94	7	100	100	31

Note: Section 3 describes the indicators and applicable thresholds. Group sizes refer to the target population as defined in Section 1. Colour shadings identify categories with high (dark blue) and lower (light blue) frequencies. Complementary categories (e.g. "high" skills) are omitted. Additional information on model selection and model specification is provided in Annex B.

Source: Authors' calculations based on EU-SILC 2014

Table A.2. Characterisation of the latent groups

Percentage of individuals with selected characteristics, by group

	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10	Group 11	Target Pop
Number of individuals (%)	17	14	14	10	10	9	8	6	5	4	3	100
Number of individuals (frequency)	200191	165965	165920	123408	120340	103343	96444	67476	61118	45127	41463	1190793
Women*	62	35	100	21	100	84	34	9	24	85	83	59
Age groups*												
Youth	29	1	0	7	21	3	93	15	7	37	1	18
Prime age	56	50	47	68	79	95	7	82	8	63	57	56
Old-age	15	49	53	25	1	2	0	3	85	0	42	26
Age (average)	41	55	56	49	37	40	22	38	60	32	53	45
Main activity during the reference period												
Employed FT	8	0	0	0	0	0	0	0	2	0	0	2
Employed PT	70	5	10	2	14	33	0	2	6	0	0	19
Self-employed FT	4	0	0	0	0	0	0	0	1	0	0	1
Self-employed PT	5	1	1	0	0	5	0	0	2	0	0	2
Unemployed	9	15	5	83	14	7	67	94	13	30	18	28
Retired	1	14	6	3	1	1	0	0	48	0	3	6
Unfit to work/disable	1	46	18	5	1	1	15	1	20	4	30	13
Housework	1	15	58	5	67	48	2	1	7	57	46	26
Other inactive	1	3	2	2	2	4	16	1	2	9	3	4
Main activity at the moment of												
Employed	87	8	12	9	19	45	7	15	9	0	0	26
Unemployed	7	15	5	77	13	6	69	82	13	36	20	27
Inactive	6	77	83	14	68	48	24	3	78	64	80	47
Length of unemployment spell†	9.7	12.9	..	12.5	12.3	..	12.5	11.7	..	13.0	..	12.2
Level of education (ISCED)												
Primary	9	30	24	19	8	3	8	9	17	18	40	16
Lower secondary	11	26	24	26	15	8	17	25	11	24	26	19
Upper secondary	44	23	34	28	53	28	54	35	19	45	24	36
Tertiary	36	21	19	27	23	62	21	31	52	14	10	29
Years of education	11.4	9.6	9.8	10.3	10.9	12.8	10.8	10.9	11.5	10.0	8.9	10.7

Table A.2. Characterisation of the latent groups (cont.)

Percentage of individuals with selected characteristics, by group

	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10	Group 11	Target Pop.
Number of individuals (%)	17	14	14	10	10	9	8	6	5	4	3	100
Work-related skills (ISCO)												
<i>No work-related skills</i>	0	0	0	0	5	1	82	0	15	97	97	15
<i>Elementar occupations</i>	21	26	21	30	26	6	8	29	8	1	2	19
<i>Craft and machine operators</i>	21	25	27	20	28	10	4	18	5	1	1	18
<i>Clerk and sales</i>	34	35	39	37	29	46	5	42	30	1	0	31
<i>Technicians et al.</i>	11	5	5	5	5	13	1	5	12	0	0	6
<i>Professionals</i>	9	6	6	3	2	17	1	4	22	0	0	7
<i>Managers</i>	4	3	2	4	4	8	0	3	7	0	0	3
Years of paid work experience†	19	25	17	22	10	15	3	16	37	..	..	19
Severe health limitations	2	31	13	2	4	1	4	3	16	2	16	9
Migrant	16	12	14	19	30	25	11	28	13	37	17	19
Equivalent disposable income (€/year - average)	22536	17634	19718	15356	14928	24425	16416	14474	29146	12803	16539	18920
<i>Bottom quintile</i>	22	37	31	42	43	13	39	45	20	58	38	33
Position in the income distribution												
<i>Second quintile</i>	22	25	23	27	35	18	22	32	16	27	26	25
<i>Third quintile</i>	23	18	19	21	15	25	20	15	18	12	19	19
<i>Fourth quintile</i>	16	15	17	7	5	24	14	6	23	2	9	14
<i>Top quintile</i>	17	6	10	3	2	20	5	1	23	0	8	9
AROPE (eurostat methodology)	18	30	25	34	30	10	31	36	15	48	29	26
Material deprivation (Eurostat)												
<i>No material deprivation</i>	74	57	70	61	56	79	56	45	81	35	56	64
<i>Deprived</i>	16	24	20	20	23	14	24	38	10	43	18	21
<i>Severe</i>	10	18	10	19	20	6	20	16	8	23	26	15
Benefits - Recipients and average amounts (€/year)												
<i>Sickness and disability recipients (%), they receive, in average†</i>	7	56	29	11	10	8	17	7	32	6	30	20
<i>Unemployment benefits recipients (%), they receive, in average†</i>	5830	11453	9181	8301	10671	..	10015	..	11134	..	9915	10134
<i>Social Assistance recipients (%), they receive, in average†</i>	36	18	10	72	19	16	57	78	16	30	12	32
<i>Housing Benefits recipients (%), they receive, in average†</i>	8340	7961	6205	9772	8759	5745	6367	12903	..	9983	..	8951
<i>Family-related benefits recipients (%), they receive, in average†</i>	5	13	6	7	13	3	11	13	6	27	15	9
<i>Old-age Benefits recipients (%), they receive, in average†</i>	744	747	1139	..	1050	..	636	..	..	481	..	803
<i>Single</i>	17	41	30	38	40	8	30	38	21	49	48	31
<i>Couple without children</i>	1849	1757	1215	1788	3172	..	1686	3382	1330	2875	1510	2040
<i>Couple with children</i>	54	45	39	32	100	100	63	100	22	100	44	60
<i>2+ adults without children</i>	5630	7304	6342	5010	9400	5480	7580	6703	8540	8228	8312	6999
<i>2+ adults with children</i>	3	12	4	3	0	2	0	1	53	0	1	6
<i>Lone parents</i>	..	18562	..	..	..	..	..	..	35946	..	..	27185
Household type												
<i>Single</i>	5	21	10	21	0	0	2	0	18	0	10	9
<i>Couple without children</i>	21	31	37	29	0	0	10	0	40	0	37	20
<i>Couple with children</i>	32	23	18	13	64	85	24	84	9	74	21	37
<i>2+ adults without children</i>	21	16	22	29	0	0	35	0	25	0	22	17
<i>2+ adults with children</i>	15	5	8	3	8	9	23	10	7	18	5	10
<i>Lone parents</i>	5	4	4	5	27	5	7	5	2	8	4	7
Have children*	28	15	1	0	100	100	18	100	3	100	6	37
Number of children†	1.6	1.6	..	..	1.7	1.8	1.5	1.8	..	1.8	..	1.7
Age of the youngest child†	6	6	..	..	5	5	6	5	..	4	..	5
Live in rural area*	23	23	21	27	33	26	21	26	22	29	18	24
Household with other working household members	62	35	51	35	49	87	54	41	40	41	37	50
Number of simultaneous barriers	1.5	2.1	2.1	2.0	2.8	2.1	3.3	2.6	1.7	3.9	3.8	2.3

Note: Colour shadings identify categories with high (darker) frequencies. The average number of simultaneous barriers per individual is computed for the core indicators in Table A.1 with the exception of recent work experience. Income quintiles refer to the entire population. Poverty risks and material deprivation are calculated with the Eurostat methodology. "Length of unemployment spell" only covers reference period: unemployment spells that started before the start of the reference period are left-censored at the start of the reference period.

* The variable enters as an additional indicator in the latent class model. See Annex B for details.

† Average across observations with strictly positive values.

Source: Authors' calculations based on EU-SILC 2014.

ANNEX B LATENT CLASS ANALYSIS AND MODEL SELECTION

The segmentation method used in this note is *Latent Class Analysis* (LCA). This method exploits the interrelations of an array of indicators through a fully-specified (i.e. parametric) statistical model for organising the target population into homogeneous groups. In the present framework, the indicators represent employment barriers and the statistical algorithm therefore identifies population sub-groups sharing similar barriers to employment, e.g. “low skills *and* scarce job opportunities” for Group 1; “low work experience *and* low financial work incentives” for Group 2, etc.

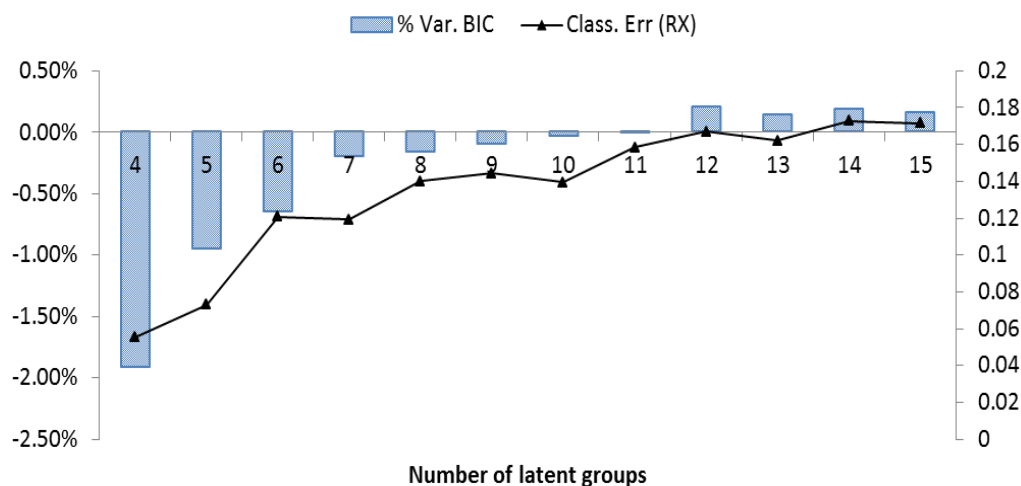
LCA has three main advantages relative to other common segmentation (or “clustering”) methods: 1) Formal statistical tests guide the selection of the optimal number of groups and other model’s features; 2) LCA does not allocate individuals into specific groups in a deterministic way but, instead, provides *probabilities* of group membership, thus reducing possible classification errors in any post-estimation analysis; 3) LCA deals easily with common data-related issues such as missing data and complex survey designs.

Latent Class Analysis does not automatically provide an estimate of the *optimal* number of latent classes. Instead, models with different number of classes are estimated sequentially and the optimal model is chosen based on a series of statistical criteria. To summarise, the model selection process starts with the definition of a *standard* latent-class model that is repeatedly estimated for an *increasing number of latent classes* (Step 1).¹³ The choice of the *optimal* number of classes is primarily based on goodness-of-fit and error-classification statistics (Step 2, see also Figure B.1), and then on the analysis of potential misspecification issues (Step 3). Fernandez et al. (2016) describes these steps in details and provides guidelines for practitioners interested in adapting the approach to specific analytical needs or data.

Figure B.1 summarises graphically Step 2 outlined above for Irish SILC 2014; The blue bars show the percentage variations of the *Bayesian Information Criterion* (BIC, Schwartz 1978)¹⁴ for increasing numbers of latent groups, whereas the black line shows, for the same groups, the *classification error statistics* (Vermunt and Magdison, 2016).¹⁵ In general, a smaller value of the BIC indicates a more optimal balance between model fit and parsimony, whereas a smaller value of the classification error statistics means that individuals are well-classified into one (and only one) group. In Figure B.1 the BIC is minimised for a model with 11 classes and the classification error of 16% indicates that the model provides a good representation of the heterogeneity in the underlying data.

-
13. A *standard* latent class model means that the likelihood function is derived under the so-called Local Independence Assumption (LIA). See Fernandez et al. (2016) for details.
 14. The BIC summarises into a single index the *trade-off* between the model’s ability to fit the data and the model’s parametrisation: a model with a higher number of latent classes always provide a better fitting of the underlying data but at the cost of complicating the model’s structure.
 15. The classification error shows how-well the model is able to *classify* individuals into specific groups. To understand the meaning of the classification error index it is important to keep in mind that LCA does not assign individuals to specific classes but, instead, estimates probabilities of class membership. One has therefore two options to analyses the results: allocate individuals into a given cluster based on the highest probability of class-membership (*modal* assignment) or *weighting* each person with the related class-membership probability in the analysis of each class (*proportional* assignment). The classification error statistics is based on the share of individuals that are miss-classified according to the modal assignment.

Figure B.1. Selection of the optimal number of latent classes



Post-estimation tests based on the *Bivariate Residuals* (Vermunt and Magdison, 2005) show for the 11-class model some residual *within-group* correlation between ten pairs of indicators. This indicates that the model violates to some extent the Local Independence Assumption (LIA).¹⁶ Increasing the number of latent classes always reduces the residual dependencies between indicators. For instance, the 17-class model shows no signs of local dependencies, but this comes at the cost of a higher classification error (20%).

Following Fernandez et al. (2016) and Vermunt and Magdison (2005) the residual dependencies between indicators is addressed with the so-called *direct effects*; these are ad-hoc terms that enter the specification of the likelihood function to model explicitly the *joint* probabilities of pairs of indicators conditional on group membership. The inclusion of direct effects eliminates any residual correlation between the relevant pair of indicators (by construction) but it also requires repeating the model selection process, as the new baseline model with local dependencies may lead to a different optimal number of classes. For the new baseline model with direct effects the BIC still points to the 11-class model, which therefore remains the favourite solution.¹⁷

-
16. The LIA shapes the algebraic specification of the model and, in practice, requires the indicators to be *pairwise* independent *within* latent groups. Bivariate residuals are Pearson chi-squared tests comparing the *observed* associations between pairs of indicators with the *expected* association under the assumption of *local independence*; large differences between estimated and observed associations signal violations of the LIA.
17. Age, gender and regional differences define labour market segments that are worth including in the latent class model to account for differences between and within these groups. Fernandez et al. (2016) discusses three possibilities for including additional variables in the model's specification. In SILC-2014 for Ireland the favourite specification in terms of lower classification error, interpretation of the results and specification tests includes age differences directly in the classification model and gender as an active covariate. SILC-IRL contains information on the degree of urbanisation but not on regions. This variable showed little latent class separability (Lanza and Collins, 2010) when included in the model and was therefore excluded from the final specification. Figure B.1 is based on a model that already includes information on age (3 categories: 18-29, 30-54, 55-64) and gender.