An Roinn Gnóthaí Fostaíochta
agus Coimirce Sóisialaí
Department of Employment Affairs
and Social Protection

Working paper:

Evaluation of JobPath outcomes for Q1 2016 participants

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Contents

Acknowledgements

The evaluation is being carried out in the context of a partnership between the Statistics and Business Intelligence Unit of this Department and the Directorate for Employment, Labour and Social Affairs of the Organisation for Economic Co-operation and Development (OECD). The final outputs of the project include (1) the publication of a DEASP report, (2) the publication of a joint DEASP-OECD report with methodological extensions and background as well as additional results, and (3) regular quarterly publication of updated outcome statistics for JobPath participants using the same methodology as in the published reports.

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The Statistics and Business Intelligence Unit of the Department of Employment Affairs and Social Protection is part of the Irish Government Statistical Service, which is headed by the Central Statistics Office. It operates in association with, and contributes to, the wider Irish Government Economic and Evaluation Service (IGEES).

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List of abbreviations and terms

ALMPs	Active Labour Market Policies
BTEA	Back to Education Allowance
BTWEA	Back to Work Enterprise Allowance
CPI	Consumer Price Index
CSO	Central Statistics Office
DEASP	Department of Employment Affairs and Social Protection
ESRI	Economic and Social Research Institute
EU-SILC	European Union Survey on Income and Living Conditions
FÁS	Former training and employment agency, replaced by SOLAS
Intreo	The Department of Social Protection's single point of contact for all employment and income supports
JLD	Jobseekers Longitudinal Dataset
JSF	Job Sustainment Fees
LES	Local Employment Service
Live Register	This administrative record gives a count of those in receipt of jobseekers' and related welfare payments
LTU	Long Term Unemployed (>12 months)
NEAP	National Employment Action Plan
NEES	National Employment and Entitlements Service
OECD	Organization for Economic Co-operation and Development
PES	Public Employment Service
PEX	A score based on the probability of a jobseeker exiting the Live Register, based on labour market characteristics, which determines the type of interaction between the jobseeker and the Intreo office
PtW	Pathways to Work, a series of cross-Departmental labour market strategies covering 2012-2020
SOLAS	Responsible for funding, planning and co-ordinating the further education and training sector in Ireland

Executive Summary

Headline results

People who benefited from JobPath in 2016 got 20% more jobs the following year than they would have got without JobPath, and 26% more jobs in 2018.

And people who did get jobs earned 16% more per week in 2017 and 17% more in 2018 if they benefited from JobPath in 2016.

This means that, on average, people who benefited from JobPath in 2016 had earnings from employment that were 35% higher than they would earned without the programme in 2017 and 37% higher in 2018.

Furthermore, the effect is positive for all cohorts who received the JobPath service, including those furthest from active participation in the labour market.

Headline Results	2017	2018
More people in jobs	+20%	+26%
Higher weekly earnings	+16%	+17%
Extra earnings from work	+35%	+37%
Welfare supports	-4%	-9%

Table 1: Headline 2017 outcomes for people who benefited from JobPath in 2016

Younger Casual Claimants	Younger Professionals	Intermittent Labour Market Attachment	Shorter Durations	Older, With Strong Employment History	Self-Employed	Persistent Longer Durations
+61%	**+54%**	**+100%**	**+54%**	**+14%**	**+35%**	**+24%**

Table 2: Increase in earnings due to JobPath, by Live Register cluster (values for all clusters refer to people in receipt of jobseekers payments for at least 12 months prior to referral to JobPath.)

Background

The evaluation is being carried out as part of a partnership between the Statistics and Business Intelligence Unit of the Department of Employment Affairs and Social Protection and the Directorate for Employment, Labour and Social Affairs of the Organisation for Economic Co-operation and Development (OECD).

JobPath was introduced in 2015, some years after the dramatic collapse in employment that occurred through 2009-2012. A share of those who lost jobs in this period became long-term unemployed in the years that followed. The response of the State's Public Employment Service (PES) for this cohort included the contracted provision of employment services through the JobPath model.

In simple terms JobPath provides additional case worker resources to provide a one-to-one, case managed, employment advisory service to long-term unemployed jobseekers. It sits alongside and augments the case-worker capacity that was already in place in Intreo and the Local Employment Services (LES). A key difference compared to Intreo and LES services is that a significant proportion of JobPath contractor payments are based on actual employment outcomes achieved. By comparison directly provided Intreo and LES services are pre-funded and the costs incurred are not related to outcomes achieved. The purpose of

this study is to determine if, and if so the extent to which, those long-term unemployed people who participated in JobPath fared better or worse than similar individuals who did not receive the service.

JobPath in Operation

Referrals to JobPath come from the long-term unemployed cohort of the jobseeker population. For the purpose of JobPath selection, all long-term unemployed jobseekers on the Live Register, aged between 18 and 61 years old inclusive, are categorised into groups based on duration of unemployment (i.e. 1-2 years, 2-3 years, etc.). Selection for referral to JobPath is by stratified random sampling using these categories based on duration. In addition to ensuring equity in the selection, the objective of this process is to guarantee that people referred to JobPath are representative of the long-term unemployed people on the Live Register.

Two JobPath contractors work with jobseekers referred by the Department of Employment Affairs and Social Protection to provide job coaching and job search assistance. Participants on JobPath receive intensive individual support from the contracted providers to help them address barriers to employment and to assist them in finding jobs. During this time, jobseekers have access to a personal advisor who works with them over two phases. In the first phase, of up to 12 months duration, the personal advisor provides practical assistance in searching, preparing for, securing and sustaining employment. In the second phase, if the participant secures employment, the service provider remains in contact with the participant during at least the first three months of employment.

Clustering

One of the novel features of this evaluation is the use of cluster analysis to interpret the results of the impact of JobPath. This recognises that jobseekers are not a homogenous group. Any programme or service can be expected to have a different impact on different jobseekers and what works particularly well for some will work less well for others.

A comprehensive dataset of jobseekers was compiled based on factors (such as age, prior work history, duration of unemployment) and a clustering algorithm calculated the optimal number of clusters so that each cluster is, to the greatest extent possible, internally consistent (individuals in the same cluster are similar to each other) and distinct from all other clusters (individuals in one cluster are different from those in other clusters). The result is a set of clusters using all of the available data to describe the jobseeker population and to allow programme impact to be reported in respect of comparable groups of similar jobseekers. The clustering exercise provides us with a greater understanding of the entire Live Register population (of which long-term unemployed people are one part), and allows us to accurately interpret the impact of JobPath for distinct cohorts.

Cluster descriptions

Short descriptions of the clusters of all Live Register claimants (not just the long-term unemployed claimants) are provided below:

Younger Casual Claimants have the shortest claim durations, with comparatively good labour market attachment even if they tend to have earnings only in the previous calendar year.

Younger Professionals: these are largely young, with a higher share of short claim durations; almost all have some history of employment.

Intermittent Labour Market Attachment: People in this cluster have a poor employment history in the past year but evidence of intermittent employment/earnings over the past five years.

Shorter Durations is the largest cluster. People in this cluster tend to be 30 to 40 years of age. The cluster has an above-average share of people with clerical and secretarial occupations.

Older, With Strong Employment History is the smallest cluster. While long-term unemployed, people in this cluster have a strong prior history of employment, they are largely male and with a greater share of people coming close to retirement age.

Self-Employed: people in this cluster were often self-employed prior to their claim. They have weak labour market attachment their average claim duration is the second longest among all the clusters.

Persistent Longer Durations: people in this cluster have generally been unemployed for more than two years and they rarely move to another cluster. This cluster has the lowest share of people who were previously in managerial or professional occupations. A large proportion of people in this cluster were referred to JobPath.

Evaluation approach

The process of evaluation begins by identifying JobPath-eligible jobseekers in Q1 2016 and dividing them into those who did not exit the Live Register[1], but did not start JobPath, and those who started JobPath. The situations of these two groups are tracked across successive time periods to consider the labour market outcomes of these two groups in the following two years.

Next, the probability of treatment is estimated using logistic regression with a binary outcome of taking part in JobPath, or not, in Q1 2016. This procedure generates probability scores for each individual and allows us to estimate inverse probability of treatment weights. Adding weights to each observation in the control group means we can ensure the treatment and control groups are adequately balanced and, consequently, that any comparison between them reflects only their differing status in respect of JobPath and not underlying differences in their labour market characteristics.

Conclusion

The Public Employment Service (PES) performs an important role in providing the support needed to people who lose their job and to help them return to employment in as short a time as possible. Performing this task well helps to minimise the drift to long-term unemployment. This, in turn, minimises the scale of the challenge faced by the PES in addressing the complex challenges of the long-term unemployment. JobPath makes an important contribution to this task.

In Ireland and elsewhere it is well established that those who become long-term unemployed (defined as being out of work for over twelve months) face diminishing prospects of securing employment. The longer a person is unemployed the less likely it is he or she will secure employment. For this reason, the quality of the service provided by the PES to this cohort is particularly important in helping to identify and address steps that they can take to secure stable employment and to support them in taking those steps. The evidence from research internationally indicates that case-work based employment counselling and job-search

[1] Exiting the Live Register refers to people who cease registration for Jobseekers Benefit (JB), Jobseekers Allowance (JA), or for various other statutory entitlements at local offices of DEASP.

assistance has a positive impact in terms of improving employment outcomes for this group (Spermann, 2015). This is the service that JobPath is designed to deliver. If it is delivering the service well, the employment outcomes and earnings for people who receive the service should be noticeably better than the equivalent outcomes for those people who do not receive the service.

Based on the econometric analysis undertaken in this research it is clear that JobPath has been effective in supporting long-term unemployed people secure work and in improving employment earnings for those who do secure work. In summary the effect of JobPath is to

1. Increase **employment outcomes and annual earnings** from employment for those who participated in JobPath
2. Increase the **earnings per week** of employment
3. Decrease **reliance on social welfare income supports** in the period after participation on the programme

Each of these factors has a positive impact on the current situation of the individuals concerned, their expected labour market outcomes, the Exchequer finances and Each of these factors has a positive impact on the current situation of the individuals concerned, their expected labour market outcomes, the Exchequer finances and future entitlements to social insurance benefits. The effect on employment outcomes – the likelihood of a person getting a job – is very significant with **a 20%+** improvement in employment outcomes in 2017 and **26%+** in 2018. Of equal note is that the weekly employment earnings of people who secured employment with the support of JobPath are **16% higher** than the weekly employment earnings of people who secured employment without the support of JobPath in 2017 and **17% higher** in 2018. In total therefore the positive employment/earnings impact is **in the order of 35% in 2017 and 37% in 2018.**.The impacts were positive not only on an overall basis but for each of seven different clusters of Jobseekers with the positive employment earnings impact ranging **from 24%** for people with a prior history of being very long term unemployed **to 100%** for those people with prior history of intermittent employment.

Although evaluation methods and target groups differ between studies, compared to other employment schemes that have been the subject of econometric analysis this is

- Significantly better than the Back to Education Allowance Scheme (where the ESRI econometric evaluation indicated negative employment outcomes).
- Slightly ahead of the impact of the JobBridge programme - where the differential employment impact was estimated at c 14 percentage points (32% improvement)
- Somewhat lower than improvement previously reported (2017) for the Back to Work Enterprise Allowance Scheme (a scheme that supports people start their own business meaning that all participants, by definition, see an improvement in employment outcomes).

These findings indicate, firstly, that it is possible to achieve positive results for unemployed people with a payments-by-results contractual model; and secondly, that the State should continue to prioritise providing case-managed employment advisory services to long-term unemployed people.

Introduction

This evaluation of the JobPath service is being carried out in the context of a partnership between the Statistics and Business Intelligence Unit of the Department of Employment Affairs and Social Protection and the Directorate for Employment, Labour and Social Affairs of the Organisation for Economic Co-operation and Development (OECD). The final outputs of the project will be:

(1) the publication of a DEASP report,

(2) the publication of a joint DEASP-OECD report with methodological extensions and background as well as additional results, and

(3) regular quarterly publication of updated outcome statistics for JobPath participants using the same methodology as in the published reports.

In this evaluation, we use cluster analysis to segment the Live Register into seven groups of people with similar labour market histories, and then compare the outcomes of those who received the JobPath service with other eligible people within each cluster.

The evaluation examines the labour market history of JobPath participants and compares them to people who did not receive the JobPath service, selecting only those of the latter group that closely resemble the former. This means the two groups are extremely similar but for one factor – one group received the JobPath service. By comparing the outcomes of the two groups at later stages, we can estimate the impact on jobseekers of receiving the JobPath service.

JobPath is the first intensive job search assistance service provided to long-term unemployed people where payments are directly related to employment outcomes achieved. As well as providing evidence on whether JobPath enhanced the labour market outcomes of long-term unemployed people, this evaluation will provide an insight into the broader question of whether intensive case management of long-term unemployed people works, by comparing outcomes of those undergoing intensive case management and those who did not receive a similar service.

This paper analyses the impact of JobPath on improving the employment outcomes of long-term unemployed people for those who participated in Q1 2016. The measures by which we assess the employment outcomes to have changed are twofold:

- the amount of money earned in earnings from employment compared to the amount of money received in social welfare payments in the 2017 calendar year
- the number of weeks of insurable employment in the 2017 calendar year

These measurements of labour market outcomes are distinct from the job sustainment fee paid to JobPath providers (see Section III), which is not considered in this analysis. Job sustainment fees are paid by the Department of Employment Affairs and Social Protection to the JobPath contractors only under certain circumstances. Although these fees are indicative of positive outcomes for the individuals concerned, they are not, of themselves an objective indicator of an enhanced labour market outcome compared to other individuals who did not participate in JobPath. This evaluation seeks to answer the question ‘has JobPath had a differential impact on jobseeker employment outcomes.

The paper is structured as follows: Section 1 outlines the social protection system, the extent of its coverage in Ireland, as well as providing an overview of the Department of Employment Affairs and Social Protection, its contracted services, and the policy background as set out in Pathways to Work; Section 2 describes the labour market context of this evaluation; Section 3 explains how JobPath works and the volume of referrals to the service; Section 4 reviews the relevant literature; Section 5 describes the data used for the evaluation; Section 6 presents the evaluation approach; Section 7 reports on labour market outcomes; and Section 8 concludes with the policy implications and future directions.

I Social Protection in Ireland

Social protection is generally accepted to be a set of measures that a society provides to its members, both to insulate them from poverty and social exclusion caused by a lack of income (e.g. due to sickness, disability, maternity, employment injury, unemployment, old age, or death of a family member) and to improve their prospects of exiting poverty and social exclusion.

Social protection encompasses an assortment of measures that cover every conceivable variety of contingency, from life's certainties (e.g. old age) to the unforeseen events that would, without some mitigating assistance, have devastating effects (unemployment, sudden illness). As well as covering a range of circumstances and life events, from birth to death, social protection also extends widely across society, from those with a long history of needing social support to those who never anticipate the events leading to reliance on social protection.

Social protection contributes to reducing poverty, exclusion, and inequality while enhancing political stability and social cohesion. Social protection contributes to economic growth by smoothing household income and thus domestic consumption. Furthermore, social protection safeguards and enhances human capital and productivity, making it a critical policy for transformative national development.

Ireland has a high social benefit coverage ratio against the risk of unemployment, in both good and bad times. This reflects a commitment in the social protection system to financially supporting people who are affected by unemployment, and constructing the support as being for unemployed jobseekers, regardless of unemployment duration. It is worth contrasting this approach with other countries where entitlement to unemployment benefit payments is time limited or otherwise targeted to specific groups of jobseekers, and where benefit coverage can be low as a result.

Traditionally, the Irish Public Employment Services (PES) has provided income support to long-term-unemployed jobseekers without any time limitation apart from the movement from the insurance-based Jobseekers Benefit to the means-tested Jobseekers Allowance, both of which are paid at the same maximum rate.

The extensive coverage of unemployment benefits in Ireland is evidenced in the World Social Protection Report 2017/2018 (see Figure 2) and also in the two main official statistics relating to unemployment and claimant counts – the LFS and the Live Register. The official measure of unemployment (carried out according to measurement standards set by the International Labour Organization), is based on a survey of households, with results released every quarter. The Live Register is a count of claimants of certain weekly social welfare payments. As well as people who need income support when out of work, the Live Register includes casual workers and people signing for credited contributions, which are payments made during unemployed based on paid credited PRSI contributions in the past.

In recent decades, governments throughout the developed world have moved from simply providing a system of passive income supports to developing PES that prioritises action to promote active inclusion and activation into employment. This sits alongside, and is a counterpart to, the provision of long-term income support (i.e. insulation against the poverty and social exclusion effects of a loss of income) by providing incentives and intensive assistance to help people secure employment (i.e. to help them exit poverty/social exclusion and to reduce dependence of social welfare transfers). In the case of long-term unemployed

people, the services provided by PES typically comprise a case-management approach to support jobseekers through job-search assistance and job-counselling (e.g. Intreo/LES/JobPath) together with a number of programmes and services specifically tailored to meet the needs of long-term unemployed people, including work-placement programmes (e.g. JobBridge/YESS), state employment schemes (e.g. CE/Tús), recruitment subsidies (e.g. JobsPlus), and education and interventions (e.g. BTEA and Momentum).

The commitment to full social protection coverage for all unemployed people in both good and bad times, combined with the openness of Ireland's labour market and economy, requires a system that is flexible both in terms of its financial capacity to support people through unemployment and – crucially – in its activation and case management capacity.

Providing high-quality activation and case management capacity using an in-house permanent staff cadre is challenging in a situation where there are cyclical, and sometimes rapid, changes in the number of unemployed jobseekers. That is why the Irish PES has always had recourse to contracted services that are flexible across the economic cycle. This has ensured a responsive system of employment support for those in unemployment despite the recurring economic cycles of low unemployment followed by high unemployment, a risk that is associated with Ireland's position as a small open economy (see Figure 1).

Ireland's national statistics agency, the Central Statistics Office, cautions against conflating the two measures. In many countries, the number of people unemployed and the number of claimants are at very different levels. However, once casual jobseekers and those signing for credited contributions are removed, the core Live Register (LR) – people receiving weekly Jobseeker payments – tracks unemployment closely. Figure 1 shows the number of people receiving Live Register social welfare payments from 2004 to 2018, disaggregated by those signing for credits, those receiving casual jobseeker payments, and all other claimants (typically recipients of either Jobseekers Benefit or Jobseekers Allowance).

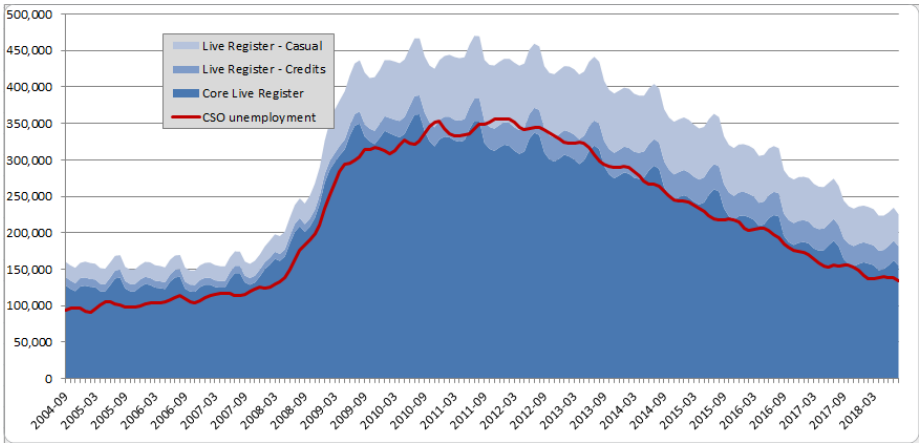


Figure 1: Numbers on the Live Register and CSO Standardised Unemployment
Source: DEASP Administrative Data and CSO

As seen in Figure 1, the Irish social safety net has supported all the people who have been out of work at every point through over ten years of deep crisis and rapid recovery. It is worth underlining that Ireland is at the upper end of OECD measurement of the extent to which unemployed people are covered by social welfare payments. Figure 2 illustrates the pseudo-coverage rate (a simple ratio of benefit recipients and the number of unemployed people) across OECD countries, disaggregated by insurance-based payments and means-tested assistance payments.

On average, the pseudo coverage rate fell from 59% to 57% between 2007 and 2014, with changes varying per country: significant increases in countries such as Austria, Finland, and Germany contrasted with decreases in countries such as Denmark, Belgium, and Canada (OECD, 2018). Ireland's strong unemployment benefits coverage has remained stable in both crisis and recovery.

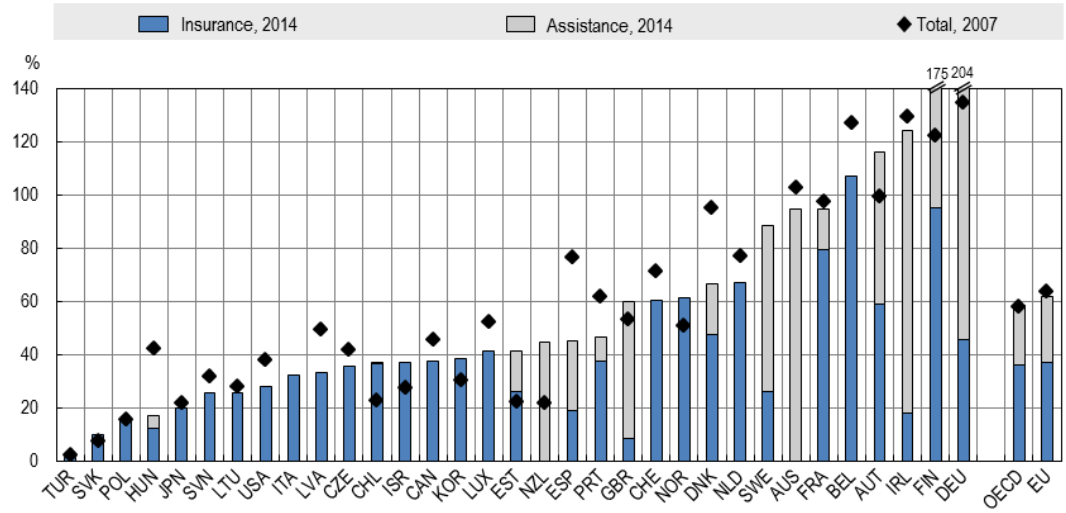


Figure 2—Pseudo-Coverage rates across OECD countries
Source: OECD Social Benefit Recipients Database

An Overview of the Department and its Contracted Services

The Department of Employment Affairs and Social Protection (DEASP) administers over 70 separate schemes and services throughout Ireland to promote active participation in society through the provision of income supports, employment services through its Public Employment Services function, and other services. These services include administration of a wide range of social insurance and social assistance schemes, including pensions, benefits, allowances and grants for children, people of working age, carers, people with disabilities, and older people. Additional services include activation, employment and community services and programmes to promote development, progression, participation, and social involvement of clients. Overall, the Department is responsible for:

- Advising the Government and formulating appropriate social protection policies;
- Design, develop and delivery of effective and cost-efficient income supports, activation and employment services, advice to customers and other related services; and
- Working towards seamless service delivery in conjunction with other Departments, Agencies and bodies in the delivery of Government policies.

The current structure of the DEASP is a result of incremental policy reforms beginning in the mid-1990s, in part driven by a broader recognition that the welfare state needed to adapt to changing labour market dynamics. The current process of reforms was initiated in 1996 by the European Employment Strategy (EES), requiring all EU member states to set out actions for the implementation of EES guidelines, through the development of national action plans. Starting with the National Employment Action Plans (NEAPs) in the 1990s, through to the National Employment and Entitlements Service (NEES) in 2011, and finally the introduction

of the first Intreo pilots in 2012, each subsequent stage in employment policy evolution introduced a discrete set of reforms. Intreo is now the single point of contact for all employment and income supports throughout Ireland.

These reforms have gradually shifted the Public Employment Services towards a model that is underpinned by a pro-active activation approach. Labour market activation policies are designed to give jobseekers a better chance at finding employment through engagements such as education or training schemes, employment support schemes, or internships. DEASP activation efforts involve engaging working-age adults with a focus on moving into employment, in line with broader social protection reforms that operate from a social contract approach to receipt of welfare payments.

Contracted Public Employment Services

Public Employment Services (PES) can help to support the efficient functioning of the labour market by improving information flows, adjusting for externalities, aiding the matching process between employers and jobseekers. PES activities include:

- *Job brokerage* by publicly disseminating job vacancies to facilitate rapid matches between supply and demand.
- *Provision of labour market* information by collecting data on job vacancies and potential applicants.
- *Market adjustment* by implementing labour market policies aimed at adjusting labour demand and supply for particular categories (e.g. through recruitment subsidies and in-work income supports for long term unemployed people and people with disabilities).
- *Management of labour migration* by coordinating the geographic mobility across borders of persons who want to use and develop their skills in a new working environment. This is done in conjunction with the EU's EURES employment service and the Department of Business, Enterprise and Innovation's employment permits section.
- *Jobseeker engagement* to identify barriers to employment and to improve the value of their 'human capital' e.g. through reskilling, work experience and training.
- *Employer engagement* to identify suitable places of employment for jobseekers.

In Ireland, the PES is managed by the DEASP and is delivered via two main channels: directly through the Intreo service and through contractors. JobPath is an example of such a contracted service, introduced in July 2015 in order to complement existing contracted services such as the Local Employment Service (LES), Job Clubs and EmployAbility.

Government policy to reduce unemployment during the period covered in this evaluation was set out in two strategy documents, the Action Plan for Jobs and Pathways to Work. First, the Action Plan for Jobs set out policies to create an environment in which business can succeed and create jobs. Second, Pathways to Work aimed to ensure that as many of these new jobs and vacancies as possible were filled by people on the Live Register.

Local Employment Service	Job Clubs	EmployAbility
22 organisations are contracted by DEASP to provide the LES, which acts as a local gateway to the scope of services available to jobseekers, in order to aid their return or entry into employment. **Services include:** • Placement service (career guidance, vacancy matching and placement). • Progression planning (education, training and development opportunities). • Mediation personalised guidance to develop a career plan (career counselling and referral to third party agencies), following the initial group information session. • Job-seeker-Employer Liaison. • Post-Employment Programme Assistance. • Post-Training/Education Programme Assistance.	Job Clubs provide structured support to job ready jobseekers (with the necessary training, education and motivation) to secure and retain paid employment in the open labour market and is a final transition mechanism for jobseekers **Services are provided via:** • Formal workshops involving the profiling of individual client skills, matching with the jobseeker with local job opportunities and the development of a better understanding of the interview process. • One-to-one engagements which allow jobseekers to avail of practical and personal support. • CV preparation service. • A drop-in service allowing jobseekers to avail of the facilities of the Job Club (e.g. internet, telephone, photocopying) at their own convenience.	EmployAbility Service is a nationwide provision of an employment support service for people with a health condition, injury, illness or disability and a recruitment advice service for the business community. **Services include:** • Employment assistance and access to a pool of potential employees with varying levels of skills, abilities and training. • Ongoing support for both the employer and employee throughout employment. • Professional job matching service to help ensure successful recruitment. • Advice and information on additional employment supports. • Follow-up Support and Mentoring to both employers and employees.

The Pathways to Work 2016-2020 strategy provided programmes and services for long-term unemployed people through targeted wage subsidies under JobsPlus and through reserved places for long-term unemployed jobseekers on employment and training programmes. JobPath, a contracted, payment-by-results employment service, provides additional resources to enable the provision of a high-quality case managed employment support service to people who are long term unemployed. By augmenting and complementing the Department's existing employment service capacity, JobPath allows more intensive engagement with the long-term unemployed than would otherwise be the case By using a payment-by-results model this additional capacity could be added, during a period of significantly constrained finances, in a relatively low-risk manner compared to a fixed-cost pre-funded model.

In December 2014, the Department of Social Protection published a contract notice inviting tenders for the provision of JobPath services. JobPath then began in the second half of 2015 and was fully rolled out to all Intreo offices by Q2 2016. Contracts covered a period of 4 years with an added 2 year 'work out' period to cover the final set of referrals. The two contracted providers of JobPath's employment services are Turas Nua and Seetec (see Figure 11 for locations of service). Furthermore, the JobPath service was designed in such a way as to be seamlessly integrated into the Intreo Service, in order to maintain the 'one-stop-shop' interface with jobseekers.

How does JobPath Work?

- The Department of Employment Affairs and Social Protection generates a stratified random sample of long-term unemployed jobseekers for referral to JobPath. For those referred, participation is mandatory, although the Department may cancel or pause a person's referral (see figures Figure 13 and Figure 14 to see the various flows of JobPath referrals).
- Those selected receive a letter inviting them to an information session on the services available to them through JobPath. Following this information session, jobseekers are then given an appointment for a one-to-one meeting with an advisor who will work with them on their case.
- JobPath participants receive intensive individual support to help them address barriers to employment and to assist them in finding jobs. The JobPath service is separated into two main phases:
    - The first phase, which is 12 months in duration, involves engagement with a personal advisor who provides practical assistance in searching, preparing for, securing and sustaining employment.
    - The second phase begins if and when a jobseeker is successful in obtaining employment. Here the personal advisor continues to work with the individual for a further period of up to 12 months.
- During their time on JobPath, a jobseeker may also be referred for further education and training opportunities; which may extend the period the jobseeker is supported through the service for up to a further six months
- Providers have flexibility in addressing whatever barriers a jobseeker may have in securing employment e.g. basic literacy skills, computer skills, etc.
- *Service Guarantee*: every participant on the programme is guaranteed a baseline level of service. This ensures that all participants receive a personal progression plan, regular face-to-face meetings with advisors, assistance with CV and job interview preparation etc.
- The period of engagement on the programme for the client is 52 weeks.

This intensive engagement with long-term unemployed jobseekers requires considerable resources and case officer time. Prior to the introduction of JobPath, the ratio of unemployed jobseekers to case officers in Ireland was over 1,000:1; which was considerably high by international standards, where figures of 100 – 150:1 are the norm with caseworker ratios for long-term unemployed people being even lower. This reflected the financial and recruitment constraints on the public service and limited the degree to which the Department of Social Protection could expand its range of services to the target groups. The introduction of extra capacity, via JobPath, to target long-term unemployed jobseekers improved this ratio significantly to approximately 238:1 in 2017 and allowed Intreo case officers to focus their time and effort on a smaller pool of unemployed jobseekers.

Pathways to Work

As noted above, Ireland's pro-active approach to the provision of PES services is set-out in the Pathways to Work (PtW) strategy, first launched in 2012. PtW sets out a comprehensive reform of the State's approach to helping jobseekers return to work.

One important element of PtW has been the merger of the PES and income support services to create a more centralised system of job search assistance. Previously, Irish employment and income support services were split among many different organisations and agencies. The DEASP had provided unemployment assistance payments and limited advisory services, while the Community Welfare Services (CWS) of the Health Service Executive (HSE) had provided temporary income support and supplementary welfare payments whereas FÁS, the former training and employment agency, had provided work placements, apprenticeships and employment information services.

As part of the PtW reform processes, one-stop-shops for job search assistance were created, known as Intreo centres. The new Intreo centres are co-ordinated centrally by the Department of Employment Affairs and Social Protection (DEASP), and consist of 61 offices throughout Ireland. Intreo centres are the central point of contact for all employment and

income supports, providing tailored employment services for both jobseekers and employers.

The initial PtW strategy was to consolidate services into a one-stop shop and to develop a more pro-active approach than NEAP or NEES. It is also worth bearing in mind that the early PtW strategies coincided with the latter part of the crisis period and the PES having learned lessons from dealing with vast inflows of new unemployment claims.

A significant initiative of the PtW strategy was the development of a Jobseekers Longitudinal Dataset, (JLD). The JLD enables the Department's statisticians to track jobseeker journeys including episodes of employment and unemployment together with services received over a prolonged period. This, in turn, facilitates the analysis of the effectiveness of individual services in improving employment outcomes. The development of the JLD was complemented by the formation of a Labour Market Council (LMC) composed of external experts and stakeholders and the development, under its guidance, of an evidence-based approach to the development and operation of the PES. This resulted in detailed evaluations of JobBridge, the Back to Education Allowance and the Back to Work Enterprise Allowance schemes.

In parallel with the development of Jobseeker services PtW also prioritised engagement with employers as being key to improving employment outcomes for unemployed Jobseekers. Again with the support of the LMC this led to the development of schemes such as JobsPlus, Feeding Ireland's Future and Momentum and services such as JobsIreland and National Jobs Week. The focus on employer engagement also informed the development of the JobPath model and, more recently, the Youth Employment Support Scheme (YESS).

In more recent times, as the inflow of new claims reduced and the stock of Live Register claimants decreased, the most recent medium-term labour market activation strategy, Pathways to Work 2016-2020 (PtW), emphasises a the consolidation of the reforms made, an increased focus on quality, and the extension of the service to non-active cohorts while at the same time maintaining a focus on long-term unemployed people in Ireland.

II Irish Economic Setting

An essential component of deriving useful policy lessons from an evaluation of a labour market programme is interpreting outcomes in light of the employment context. This section presents a number of indicators that set the context for employment outcomes for those availing of the JobPath service, using data on employment and unemployment. This section gives an illustration of the Irish economy in the crisis and post-crisis period, with the period in which JobPath operates (mid-2015 onwards) shaded in all figures.

Employment

To date, JobPath has operated in a labour market of continuing improvement in employment prospects. After the post-crisis drop in employment levels, reaching a low of 1,863,500 in Q1 of 2012, total employment has continued on the path to recovery in recent years. Figures for Q3 of 2018 put overall employment at 2,273,500, slightly higher than the pre-crisis high of 2,252,500 (Q3 of 2007).

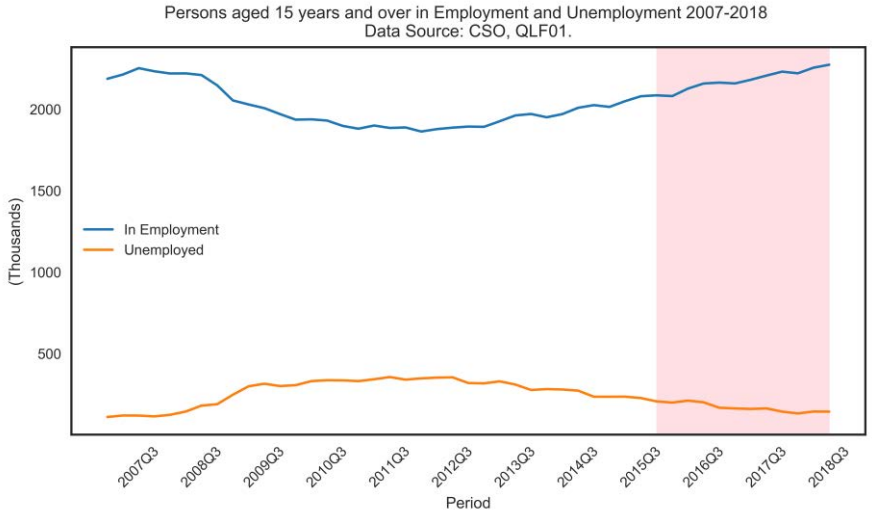


Figure 3: 2007 – 2018 Employment and Unemployment numbers for persons 15 years and older

Although the absolute value for the number of people employment is higher, the employment rate, which measures proportion of the working age population in employment, has yet to return to previous highs. Q3 2007, represented the pre-crisis high for the Irish employment rate (72.5%). During the crisis, the employment rate reached its lowest point in Q1 2012, dropping to 59.3%. The recovery in the employment rate has continued since then, most recently measuring 69.1% in Q3 of 2018.

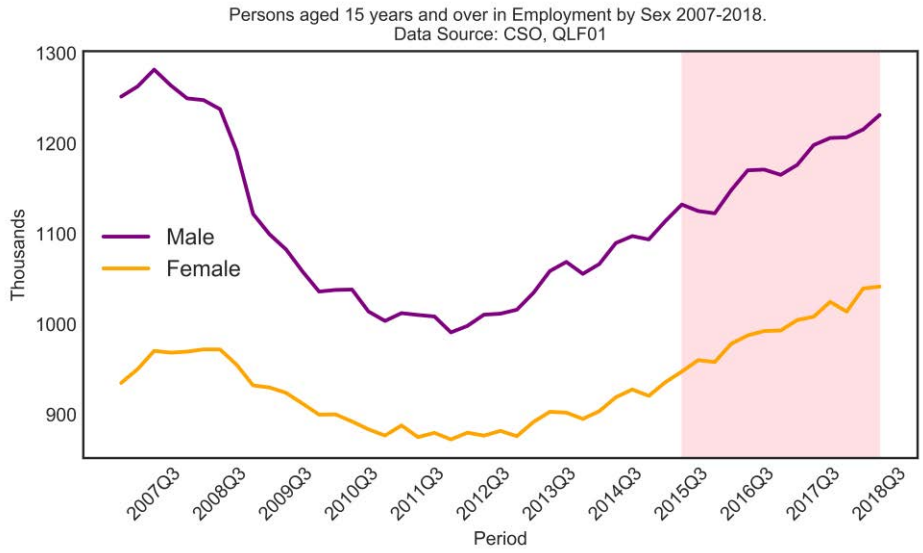


Figure 4: Persons aged 15 years and over in Employment by sex, 2007-2018
Source: CSO, QLF01

Male employment has regained some of the ground lost during the economic downturn, but has not yet reached pre-crisis levels. Female employment, while also suffering a loss during the crisis, has followed a different path to recovery. Female employment peaked at 972,100 during the second quarter of 2008. However, by the second quarter of 2017, female employment had risen to 978,300, highlighting the differing recovery pace of male and female employment. Female employment has continued on this upward trajectory, surpassing the million mark in the first half of 2017 and reaching 1, 041, 600 by the end of Q3 2018.

Unemployment and Live Register

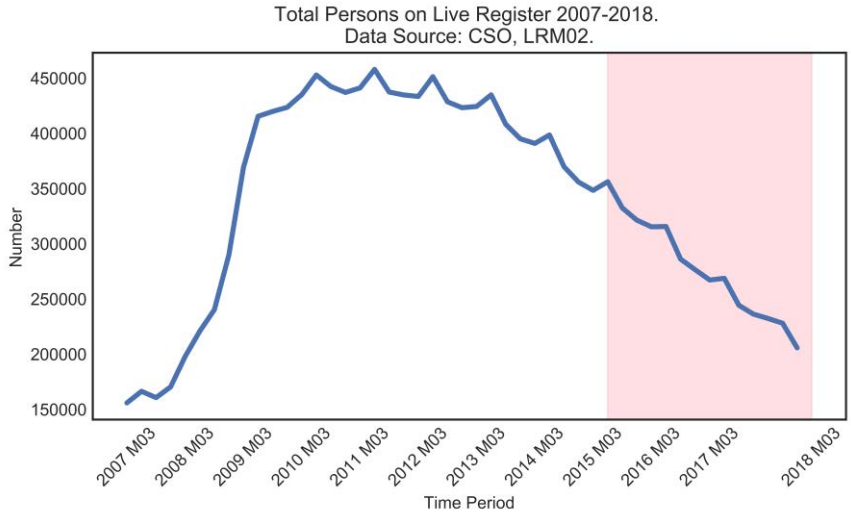


Figure 5: Total Persons on the Live Register, 2007 - 2018

Between Q1 2007 and Q1 2012 the total number of people unemployed in Ireland more than tripled from 115,000 to 351,800, with the unemployment rate increasing from 5% to 15.8% in

the same period. Within the same timeframe, male unemployment increased from 4.9% to 18.1% and female unemployment increased from 5% to 13.1%.

The severity of the impact of the crisis differed across age groups. For those aged 15-24 years old, unemployment spiked dramatically during the crisis, with the unemployment rate reaching 31.5% in February 2012 (when it was 13.6% for those aged 25-74). Since then, the Irish labour market has been on a path of continued recovery, with the seasonally adjusted unemployment rate standing at 6.0% for the third quarter of 2018. The recession saw a dramatic increase in unemployment, far above the EU rate, but also a more rapid recovery, with the unemployment rate below the EU average at present.

The Live Register counts the number of recipients of Jobseekers Benefit, Jobseekers Allowance and related payments from the Department of Employment Affairs and Social Protection. The number of people on the Live Register increased significantly during the economic crisis, from 158,752 in January of 2007 to a high of 470,284 in July 2011. The number has been declining considerably in recent years, falling to 196,261 in November 2018.

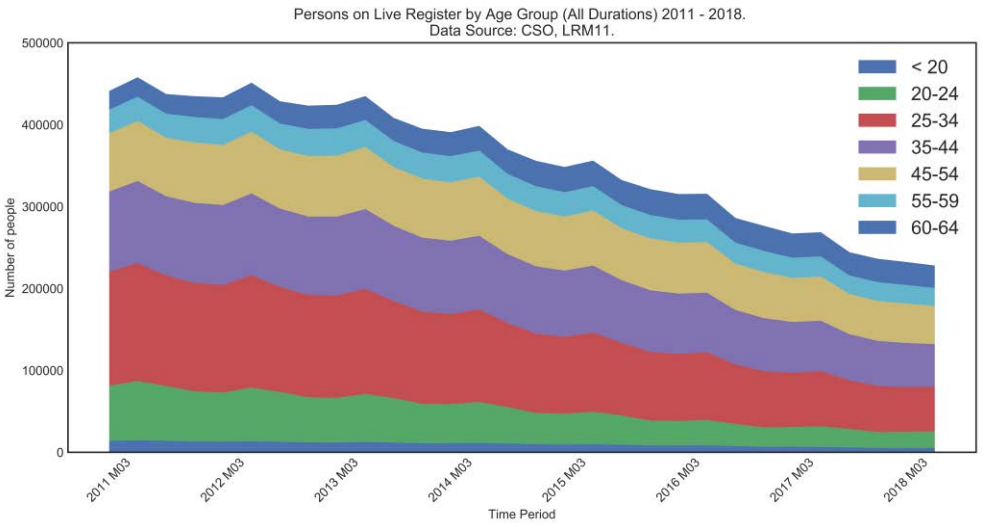


Figure 6: Persons on Live Register by Age, 2007-2018

Looking at the Live Register trends by sex, the number of men on the Live Register rose higher but decreased more rapidly. From March 2008 to March 2011, the number of men on the Live Register increased from 127,020 to 290,225, or by 128.5%. As of December 2018, men on the Live Register stood at 112, 414. The number of women on the Live Register has been decreasing steadily in recent years, but remains higher than the pre-crisis levels, measuring 87, 255 in December 2018.

Examining the recent trends in the Live Register by age group, from 2011 to present; the age category of 60 to 64 is in fact the only age bracket that has increased its numbers on the Live Register (this trend is related to the increase in the State pension age from 65 to 66 on the 1st of January 2014).

From March 2011 to March 2018, the number of people on the Live Register for more than one year decreased. This decease applied to all age groups with the exception of those aged 60 to 64.

Other indicators: Earnings and Vacancy Rates

In addition to the estimate of the number of people in employment or unemployment at a point in time and the count of unemployment benefit recipients, average annual earnings is another indicator of demand for labour. A reduction in average earnings occurred in the aftermath of the crisis, with a small increase seen in 2012, before falling slightly again in 2013. However, there was a significant recovery in average earnings from 2014 onwards. In the period 2014 to 2017, nominal growth in average annual earnings was 2.4%, representing an increase from €36,046 to €37,646, with average annual earnings growing by 1.97% in 2017. Average annual earnings for all workers are presented in
Table 3 below.

Recent increases in annual earnings have been experienced by both full-time and part-time workers. Both full-time and part-time workers saw a fall in average earnings in 2010 and 2011, before increases since then have been moderate. Both categories have seen consistent gains from 2014 to present. In the ten-year period from 2008 to 2017, full-time and part-time workers experienced nominal growth of 5.02% and 10.27% respectively in average earnings. These increases have not been eroded by inflation, as evidenced in the tables below, which shows earnings at, or slightly above, the levels of inflation from 2013-2017.

Year	2013	2014	2015	2016	2017
Rate	-0.3	0.3	1.1	1.3	2.0

Table 3: Annual Earnings Percentage Change
Source: CSO, EHA05

Year	2010	2011	2012	2013	2014	2015	2016	2017
CPI Change	-1.0	2.6	1.7	0.5	0.2	-0.3	0.0	0.4

Table 4: Average CPI Percentage Change
Source: CSO, CPA01

Labour Force Participation

The labour force participation rate measures those in the labour force (people working or seeking work) relative to the entire working age population (those aged 15 years or over). Ireland's overall participation rate stood at 67.4% in the third quarter of 2007 and dipped to a crisis low of 61.1% in the first quarter of 2013. Participation now stands at 62.3%, as of the second quarter of 2018, below the level seen prior to the financial crisis.

The crisis was most severe for men in the labour force, with participation falling from a pre-crisis high of 77.2% in 2006 Q3 to a low point of 68.3% in the first quarter of 2012. The male participation rate has been relatively immobile in recent years, sitting at 69% as of the third quarter of 2018.

Female participation started from a much lower base, with a pre-crisis high of 57.7% in the third quarter of 2007. It fell slightly at the onset of the crisis but has remained constant in recent years, staying within the range of 54.2% to 56.1% from 2010 to present.

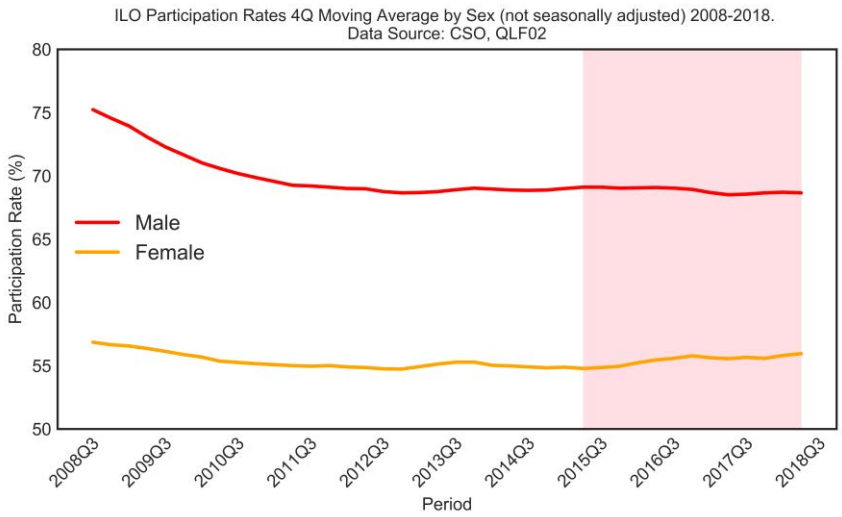


Figure 7: ILO Participation Rates 4Q Moving Average by Sex (not seasonally adjusted) 2008-2018.
Source: CSO, QLF02

The vacancy rate – the proportion of unfilled job vacancies in an economy – tells a similar story of continued improvement in labour market prospects. Looking at all economic sectors in Ireland, the vacancy rate in Ireland was at its lowest from Q3 to Q4 of 2009, 0.3%. From the end of 2009, the vacancy rate increased steadily and, since 2015 Q1, has remained in the range of 0.9%-1.2%. Ireland's Q3 2018 vacancy rate of 1.1% is below the EU average of 2.2% (Eurostat, 2018a).

Profile of Long-Term Unemployed (LTU) jobseekers

Duration on the Live Register is a salient factor for this evaluation, both in terms of the effects of long-term unemployment on likely re-entry to employment and as a qualifying criterion for referral to the JobPath service.

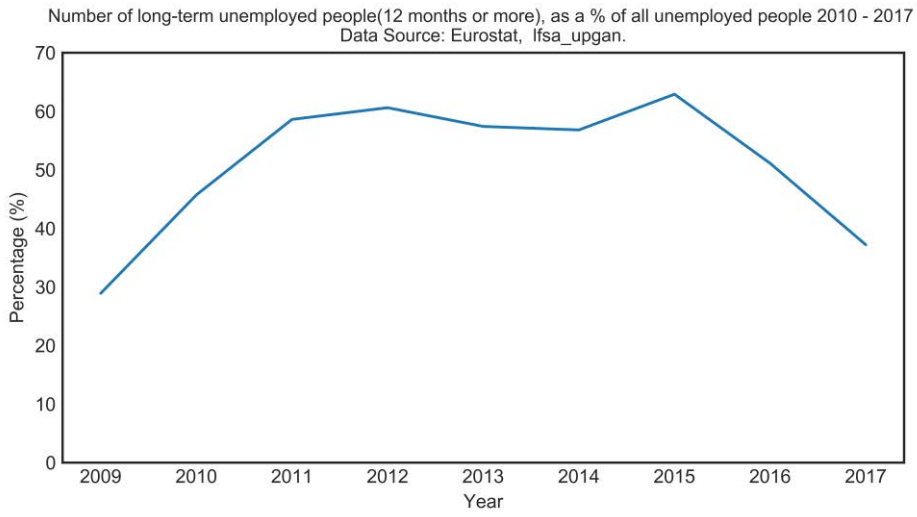


Figure 8: Number of long-term unemployed people (12 months or more) as a % of all unemployed people, 2010-2017

Following the initial onset of the economic crisis, widespread job losses led to an increase in short-term unemployment. This temporarily reduced the share of unemployment accounted for by those who are long-term unemployed (unemployed for one year or more). However, the absence of an immediate recovery meant a large proportion of the first wave of unemployed people became long-term unemployed. Long-term unemployment rose sharply in the recession, with the share of

unemployed people made up by the long-term unemployed increasing from just under 25% to over 60% in 2012. The number of long-term unemployed people, as a percentage of all unemployed people, is now at 34.9% as of Q3 2018, having fallen from a high point of 61.9% in Q1 2011.

The share of long- term unemployment, or the number of people unemployed for one year or more as a percentage of the total labour force (aged 15-74), increased consistently from the onset of the crisis and reached a peak of 9.8% in Q1 2012. The increase in long-term unemployment applied to both men and women. In Q1 2007, the share of long-term unemployment stood at 1.6% and 1% for men and women respectively, dramatically increasing to 12.3% and 6.7% by Q1 2012. Since then, the share of long-term unemployment has been on a downward trend, reaching 2.07% in Q3 of this year (the male and female values are 2.23% and 1.90% respectively).
The persistence rate refers to the rate at which short-term unemployed people become long term unemployed. This is a measure of the extent to which intervention can prevent the slide from short-term unemployment (which includes frictional unemployment as a result of churn in the workforce) into the more damaging long-term unemployment. Ireland's persistence rate was 30.1% at the end of March 2013 and has seen consistent reductions since Q3 2013, reaching 24.2% in Q1 2018. This continued contraction of the persistence rate further indicates the continuing recovery of the Irish labour market.

Period	2013Q1	2013Q3	2014Q1	2014Q3	2015Q1	2015Q3	2016Q1	2016Q3	2017Q1	2017Q3	2018Q1
Rate	30.1	30.9	29.3	29	28.7	27.5	27.2	25.6	24.5	24.4	24.2

Table 5: Persistence Rates (12 months rolling average)
Source: DEASP administrative data

Summary

This section outlines the labour market context for the introduction of JobPath, outlining the dramatic collapse in employment that occurred through 2009-2011. A share of those who lost jobs in this period became long-term unemployed in the years that followed. The response of the PES for this cohort included the contracted provision of employment services through the JobPath model. The JobPath service has operated in a period of improving employment prospects. While the long-term unemployed remain at a disadvantage compared to the short-term unemployed, the period since mid-2015 has seen increased demand for labour. Under these favourable economic circumstances, the extent to which those who participated in JobPath fared better or worse than those who did not receive the service is the subject matter of this evaluation.

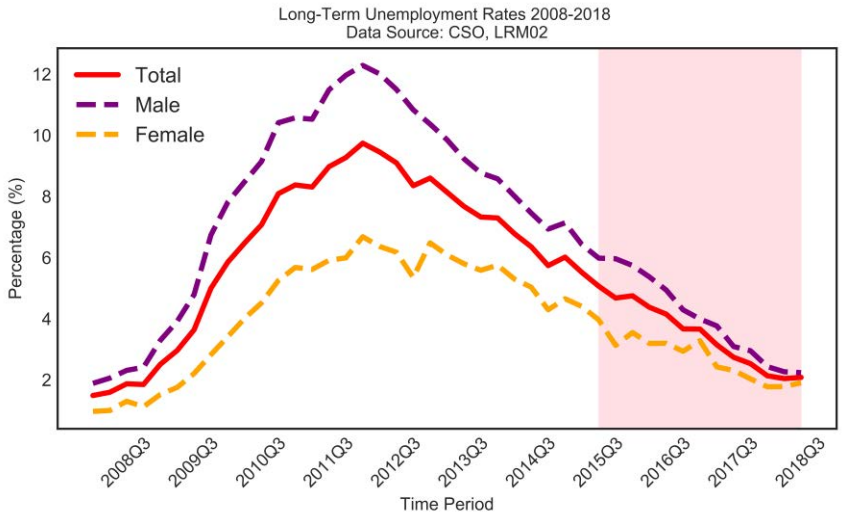
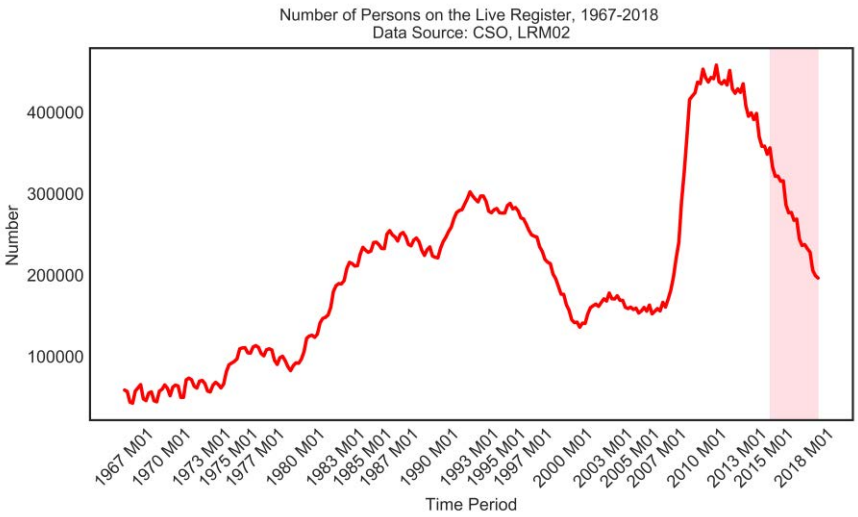


Figure 9: Long-term Unemployment Rates, 2008 - 2018

While this section recounts labour market developments in the years preceding the introduction of JobPath, a broader view of the Irish labour market shows the rapid increase in the number of people seeking unemployment payments from 2009 was not an isolated incident. As a small open economy, Ireland is subject to the effects of the global economic cycle. Although the most recent recession was deeper and more damaging than previous recessions, Figure 10 shows a history of volatility in the number of people on the Live Register.



Responding to these shocks, and preventing that slide into long-term unemployment, is part of the function of the Irish PES. The next section outlines one of the approaches of the PES to accessing additional capacity to address rapid increases in the number of jobseekers needing its services.

Figure 10: Number of persons on the Live Register, 1967-2018

III JobPath in Operation

The JobPath service

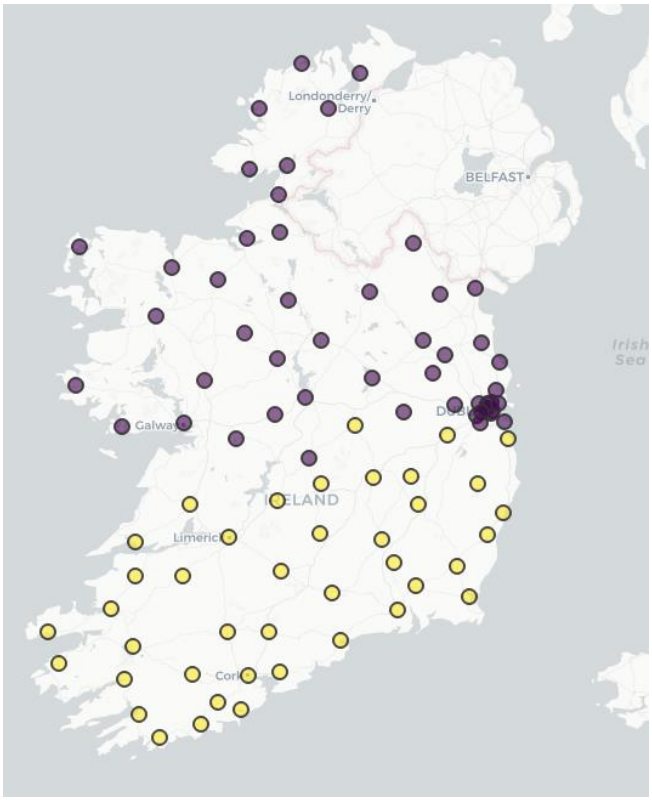


Figure 11: Map of JobPath Providers by Provider (Seetec in purple and Turas Nua in yellow)

This section describes how JobPath works as part of the Irish Public Employment Service, outlines the scope and scale of JobPath and provides statistics on referrals over the period of operation to date, 2015-2018. It also illustrates the journey of JobPath referrals (including temporary pauses and cancellations) in 2016 and 2017, the two years for which we have full year data.

On 20 July 2015 the roll-out of JobPath began, with Seetec and Turas Nua assigned to two contract areas based on the divisional structure of the Department, as seen in Figure 11 below (with Seetec covering the northern divisions and Turas Nua the southern divisions). JobPath services are provided through a network of Seetec and Turas Nua offices in 90 locations across the country, with Seetec operating in 49 locations and Turas Nua in 41 offices (see Table 33 in appendix). The 90 service delivery locations include 57 full-time locations, 12 part-time locations, and 21 Outreach offices.

The overall cost of JobPath is determined by the number of people who participate in the programme and, for those who find employment, the duration they remain in employment. Contractors are paid an initial referral fee and further payments are made on a sliding scale when jobseekers remain in employment for 13, 26, 39, or 52 weeks once the contractors can verify the employment duration with the co-operation of the jobseeker. This structure aims to reward sustainable employment where the client remains in employment for at least 12 months. Table 6 below shows how JobPath providers can potentially receive €3,718 per client. In practice, the progression rate to sustained employment for long-term unemployed people means the average cost per JobPath client is currently €780. This average cost compares favourably to costs of other forms of activation such as LES, Job Clubs and Intreo, although exact cost comparisons can be difficult to quantify, particularly for Intreo. The total amount claimed in fees by the two companies in 2015 was €1.2 million, in 2016 was €28.6 million and in 2017 was €58.5 million.

Registration	13 weeks in employment	26 weeks in employment	39 weeks in employment	52 weeks in employment	Total
8.40%	16.50%	19.80%	24%	31.30%	100%
€311	€613	€737	€892	€1,165	€3,718

Table 6: Average potential payment per JobPath Participant

These two contractors work with jobseekers referred by the Department of Employment Affairs and Social Protection to provide job coaching and advisory services. Participants on JobPath receive intensive individual support from the contracted providers to help them address barriers to employment and to assist them in finding jobs. During this time, jobseekers have access to a personal advisor who works with them over two phases. In the first phase, of 12 months duration, the personal advisor provides practical assistance in searching, preparing for, securing and sustaining employment.

The second phase starts if the jobseeker is successful in finding work and the personal advisor continues to work with the jobseeker for a further period of up to 12 months. In addition to these two phases, jobseekers may also undertake training while on JobPath and this may extend the engagement period for up to a further six months.

JobPath contractors also provide a free service for employers by means of dedicated recruitment and initial training support. They will work with the Department and with each other to ensure that a co-ordinated approach is adopted regarding engagement with employers. In addition, in-work support for jobseekers is provided, especially during the critical first few weeks, to ensure that people have the best chance of making the transition from unemployment to employment.

Once jobseekers start JobPath, they will receive the following services:

- Assessment of client skills, competencies, and aptitudes,
- Development of a Personal Progression Plan (PPP) for each client and the review of this plan on regular basis,
- Assistance with job search,
- Development of the jobseeker's curriculum vitae,
- Development of job interview skills,
- Training, education, and employment experience up to 26 weeks
- Support in the transition to employment, including a period of "in-employment" guidance/counselling,
- Access to computers, the internet, and other facilities to aid clients in their search for employment, with support on how to use these tools,
- Supports to develop key skills to assist clients to sustain employment, e.g. team working, organisation and time management skills,
- Support to deal with other issues that may make it harder for clients to find sustain employment, for example, support with managing a health/disability related condition or advice on managing finances,
- Other services or supports to enhance the client's prospects of securing sustainable employment.

After referral, an initial one-to-one meeting is held with a personal advisor. Clients and personal advisors prepare a personal progression plan covering:

- Contact information of client and advisor,
- Details of the client's skills, competencies, and aptitudes,
- Fields of work that are appropriate for the client,
- Barriers to employment facing the client and the agreed actions to overcome such barriers.
- The client's job/employment goals,
- An agreed set of skills training, education, and development goals and actions,
- An agreed set of potential employment related experience interventions,
- All actions to be taken by the client during the first 13 week in-employment support period.

Referral to JobPath

Referrals to JobPath come from the long-term unemployed cohort of the jobseeker population. Within the JobPath contract, a provision is also made to select unemployed people who are at high risk of long-term unemployment. For the purpose of JobPath selection, all long-term unemployed jobseekers on the Live Register, aged between 18 and 61 years old inclusive, are categorized into groups based on duration of unemployment (i.e. 1-2 years, 2-3 years, etc.). Selection for referral to JobPath is by stratified random sampling using the categories above. In addition to ensuring equity in the selection, the objective of this process is to guarantee that people referred to JobPath are representative of the long-term unemployed people on the Live Register.

Years	Contractor Name	Passing 12 months	LR 1-2 Years	LR 2-3 Years	LR > 3 Years	LR Working Part Time	Grand Total
2015	Seetec	0	817	689	1,771	0	3,277
	Turas Nua	0	1,251	777	2,376	0	4,404
2016	Seetec	1,302	9,127	5,898	23,247	239	39,813
	Turas Nua	975	8,829	4,941	20,965	885	36,595
2017	Seetec	1,071	11,097	4,925	22,171	8,385	47,649
	Turas Nua	806	9,587	4,048	18,292	7,953	40,686
2018	Seetec	681	9,588	2,579	22,939	6,638	42,425
	Turas Nua	488	6,925	1,768	15,451	5,938	30,570
Total		**5,323**	**57,221**	**25,625**	**127,212**	**30,038**	**245,419**

Table 7: The number of jobseekers referred to JobPath from July 2015 to September 2018, broken down by quarter, contractor, and length of time on the Live Register.

Table 7 shows the number of jobseekers referred to the programme (including duplicate referrals)[2], from July 2015 to September 2018, by quarter, contractor and length of time on

[2] A jobseeker whose referral is cancelled by the Department as a result of no longer meeting the eligibility criteria for participation with the service, may be referred at a later date should their circumstances change and they become eligible for referral again.

the Live Register. Shortly after receiving notification from the Department of referral to JobPath, jobseekers begin engagement with the JobPath provider. For the vast majority of jobseekers referred to JobPath, there is a short lag between initial notification of referral to JobPath and commencement (the client's interview date), which is the first direct engagement with JobPath (see Figure 12).[3] The same information for 2017 is in the appendix. Figure 13 and Figure 14 below outline what can happen after a jobseeker is referred to JobPath – the charts refer to 2016 and 2017, the years for which full year data are available.

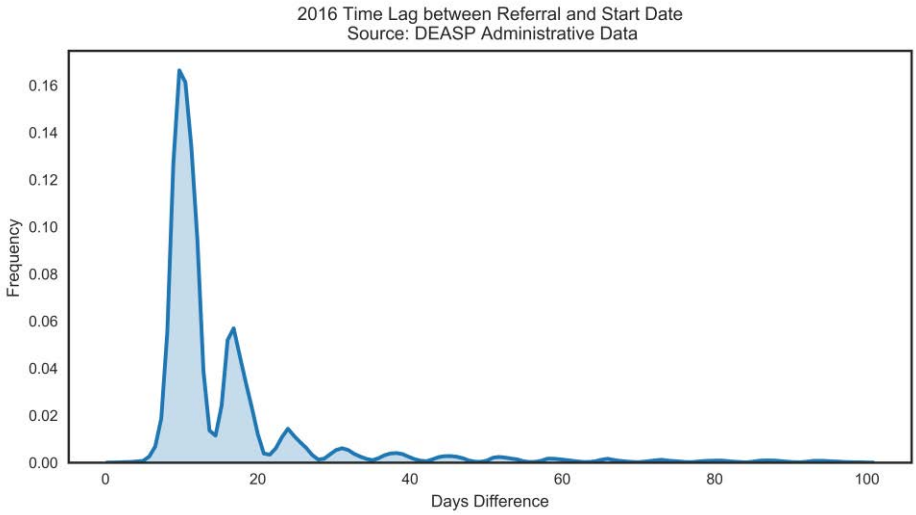


Figure 12: Time lag between 2016 JobPath referral and start date.

In total, 76,409 jobseekers were referred to JobPath in 2016, with 45,654 of those completing the programme (59.7% of those referred). The completed status can refer to two separate groups of clients. First, it applies to anyone who has completed phase 1 (the initial minimum one-year period of JobPath engagement) but remains on the Live Register. Second, jobseekers referred to JobPath who secure employment after working with the provider progress to phase 2, which is the "in work support" phase of JobPath. The JobPath service provider will continue to offer support to the client until they complete 52 weeks in employment, at which point they will have completed phase 2 of JobPath. Therefore, the 'started (but not yet completed)' status includes people who have completed phase 1 of JobPath and are in employment and still in phase 2.

When jobseekers are referred to JobPath, they do not always progress directly to starting the programme. Some of those referrals may have their referral paused before starting (13 in 2016) for a variety of reasons; including health and maternity reasons. Some jobseekers may have the referral cancelled by the Department before starting, (7,970 jobseekers or 10.4% of total referrals). The main reasons for these cancellations can be seen in Figure 13 and Figure 14, with the category of "Others" including people not yet being ready for JobPath activation and those whose status is "No Longer in Payment", meaning the claim has been closed and no closure reason identified.

[3] This report evaluates the outcomes of those who were engaged with JobPath; future updates will also examine the impact of being referred to JobPath for those who were referred but did not commence the programme.

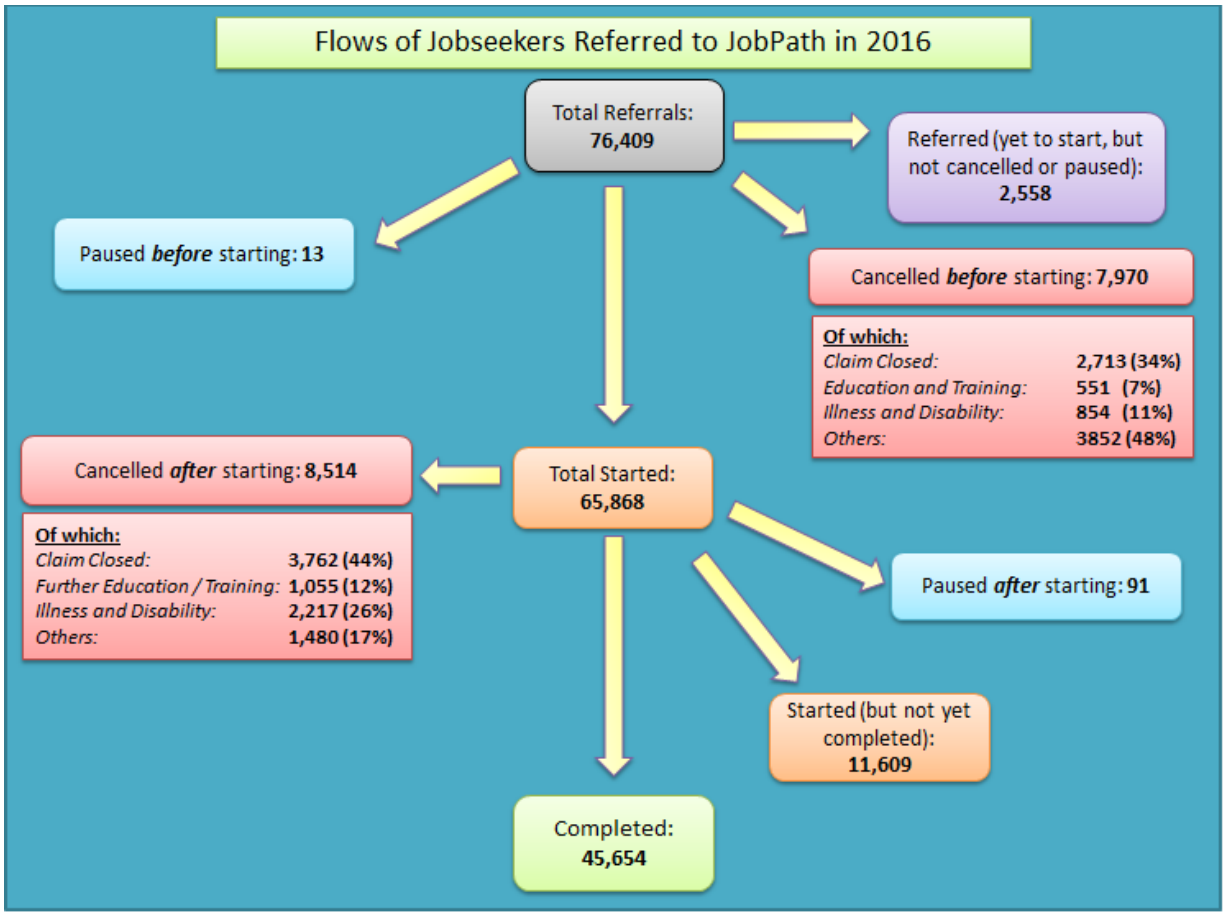


Figure 13: Flow of Jobseekers Referred to JobPath in 2016

Among those who were cancelled before starting JobPath, 3,544 (43.59%) can be classified as "Claim Closed". Claim Closed can be broken down into two different types:

- Claim Closed (Not in Employment),
- Claim Closed (To Employment Pre-Start of Programme).

When those referred to JobPath close their Jobseeker's Allowance or Jobseeker's Benefit claims for any reason other than starting a job, such as moving to another payment stream such as Disability Allowance) they are placed in the "Not in Employment" category. Where jobseekers start work prior to JobPath registration or the first interview with the JobPath provider, they are placed in the "Employment Pre-Registration" category. JobPath providers do not receive any fees in respect of people who commence employment before registering with the service.

From those referred in 2016, a total of 65,868 started JobPath (86.2% of those referred). However, a variety of factors can lead to jobseekers not completing the programme. Some 91 of those referred had their referral paused after starting. As is the case for those who were paused before starting, these people can resume the programme when ready. Some 8,514 jobseekers had their referral cancelled after starting, the reasons for which are outlined above. Finally, 11,609 people in 2016 started on JobPath, but had yet to complete it by year end.

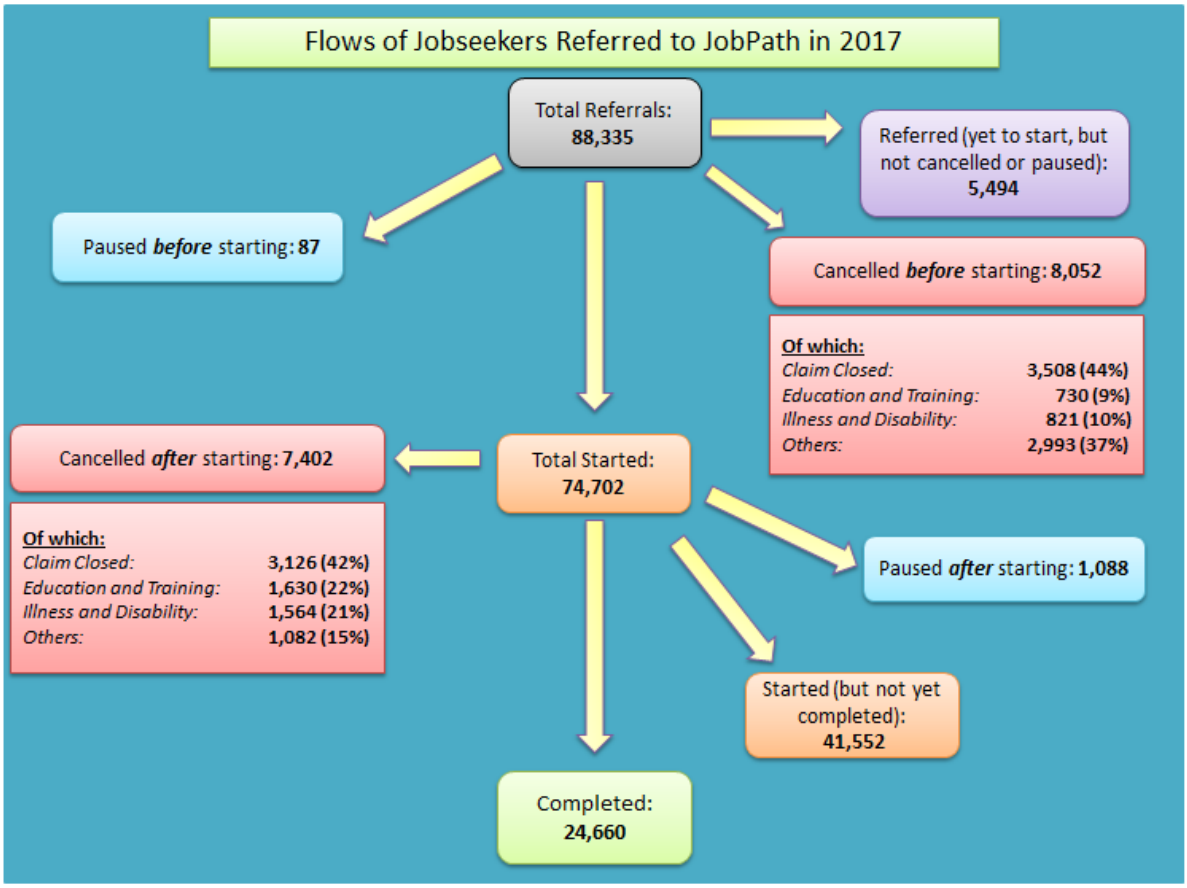


Figure 14: Flow of Jobseekers Referred to JobPath in 2017

In the 2017 calendar year, 88,335 people were referred to the programme. Some 5,494 jobseekers were referred, have not cancelled or paused and were yet to start by year-end, with 87 jobseekers pausing before starting and 8,052 cancelling before starting. Of those who cancelled before starting, the largest proportion (43.57%) came from those with a closed claim.

In 2017, a total of 74,702 jobseekers started on JobPath. After starting on JobPath, 7,402 people had their engagement cancelled and 1,088 people paused. Some 41,552 of those who started JobPath are still receiving the service, but have not yet completed, and 24,660 jobseekers referred to JobPath within the calendar year of 2017 completed the programme.

There are two ways in which people may be referred to JobPath multiple times. First, if a jobseeker has completed a year with the JobPath service continues to meet the criteria for long-term unemployment and is not engaged in other activation supports and services, they become eligible for selection for a second period of activation with the JobPath service after four to six months. Second, if a jobseeker has the referral cancelled by the Department as a result of no longer meeting the eligibility criteria for participation with the service, they may be referred again at a later date should their circumstances change and they become eligible for referral again.

IV Literature Review

To understand how to frame the JobPath evaluation, this section sets out how other research has addressed the challenges of evaluation and what techniques may assist us in coming to a judgment on the impact of JobPath. This section outlines other studies of interest where:

- The research question is what assistance is effective in helping unemployed people (particularly long-term) return to employment
- The subject of the evaluation is a contracted public employment service – much of the research on this topic compares simultaneous public and private provision of employments services, which is not directly relevant to Ireland.
- The means of overcoming the challenges of evaluation employs some form of cluster analysis to differentiate between different groups or addresses the issue of a dynamic treatment environment, with multiple successive treatment periods and repeated selections of treatment groups.
- The policy context of the evaluation is the Pathways to Work 2016-2020 strategy or the dataset used is the Jobseekers Longitudinal Dataset.

Combined, these topics demonstrate the complexity associated with the evaluation. The published research summarised here underpins the methodology that was developed and applied in this case.

Which employment programmes work?

The specific barriers to employment faced by the long-term unemployed are addressed in a number of papers and available results were summarised in the OECD (2015). Card et al (2017) conduct a meta-analysis of recent studies of active labour market programmes, finding average impacts are close to zero in the short run but become more positive two to three years after completion. The meta-analysis also points to the ideal measurement time, with impact varying by type of programme, and finding larger impacts for participants who enter from long-term unemployment. They also find active labour market programmes more likely to show positive impacts in a recession.

Spermann (2015) gives an overview of steps Germany has taken to respond to those who are long-term unemployed and offers a differentiated three-pillar approach centred on preventing and reducing long term unemployment. The pillars are as follows:

1. preventing unemployment, beginning with quality education, good written and spoken language skills, and investment in vocational training.
2. minimising short-term unemployment from turning into long-term, specifically using professional competency diagnostics to make jobseekers' strengths more appropriate to the labour market.
3. maximising outflow to employment and education through realistic target setting.

Spermann (2015) stresses the importance of ensuring that target and goal setting reflects jobseekers' needs and abilities. This involves allowing multiple work activities, such as employment, training, social integration, as valid targets that will eventually lead to employment rather than solely focusing on immediate job placement. While Spermann

stresses the importance of these three pillars for responding to long-term unemployment, he notes that without an increase in case managers and investment in high quality training, activation measures suggested by these pillars will not be successful. Overall, Spermann argues that an increase in better trained case managers paired with taking steps to deal with the structural causes of long-term unemployment (health, addiction, lack of skills, etc.) are imperative to implement the three pillars of differentiated activation.

Nie and Struby (2011) examine data for 20 OECD countries from 1998-2008 and use a regression model to compare the impact of passive and active labour market programmes, concluding that training and job-search assistance were more effective in reducing unemployment than other ALMPs.

Hamilton (2002) exploits a random assignment to 11 mandatory welfare-to-work programmes across the U.S, finding employment-focused programmes more effective than education and training.

O'Connell at al (2011) examine evidence from a number of international studies and report that job search assistance services appeared to have positive impacts, particularly when linked to payment sanctions. It also identified apparent deficiencies in the Irish services (linked to the separation of FÁS and the then Department of Social Protection) and concluded that the evidence in respect of the impact of training programmes was mixed. Specifically, short-term job specific training and job search training appear to have positive impacts, while longer term general training is associated with negative impacts. With respect to state employment schemes such as Community Employment, the evidence indicates participation in such schemes is associated with an increased risk of long-term unemployment.

Evaluating contracted public employment services

This section explores the breadth of research conducted on contracted Public Employment Services and its impacts in a variety of countries and institutional settings. As noted by O'Connell at al (2011), the evidence is mixed and it is difficult to draw conclusions as the form and models of contracting differ markedly between countries.

Bruttel (2005), for example, provides an overview of the incentive issues often associated with contracting Public Employment Services and highlights the rating system in Australia, which compares placement outcomes of contractors by employing a logit/probit regression model, controlling for labour market factors and jobseeker characteristics.

Krug and Stephan (2013) explore the effectiveness of quasi markets for placement services relative to their public deliverance in Germany, through a randomised field experiment, concluding that even in the cases of hard-to-place jobseekers, "the public provision of placement services can be at least as effective as contracting-out".

Another noteworthy randomised experiment is that of Bennmarker et al. (2013), who focus specifically on the following three groups in Sweden: those under the age of 25 who are unemployed, immigrants and disabled persons. Here the authors constructed an instrumental variable for private job placement through random assignment. The authors find that the probability of employment for all three of these groups remains unchanged between the two providers. Meanwhile, positive impacts on migrant employment chances and negative effects on young job-seekers were found. However, over time these impacts diminish, suggesting a lack of long-term impacts.

A further paper examining contracted PES in Sweden is Sund (2015). Employing data from the Swedish PES and exploiting both within region and period variation, the author implemented a differences-in-differences method. Sund found that those regions that engaged with the private contractors experienced lower turnover to employment. Combining this result with data collected by the Swedish National Audit Office indicates the result can be in part attributed to "increased administrative workload on the public employment officers due to introduction of the private contractors, but also by the ill-designed incentive scheme". However, the Sund (2015) points out that these findings could also be a result of the fact that these private contractors were a new actor in the Swedish labour market and thus, initial frictions could be experienced by such a new entrant.

Rehwald et al. (2017) compare the job finding rates of unemployed people exposed to either public or private providers of employment services. The authors conduct a randomised field experiment in Denmark, targeting those who are newly registered as unemployed and have completed university level education. These people were then randomly assigned to either the Public Employment Service (PES) or the private, contracted-out, provider. Whereas many of the other studies have target "economically disadvantaged populations", this study focusses on highly-educated jobseekers. No difference was seen in terms of outcomes in the labour market but cost analysis finds privately provided employment services significantly more expensive than publicly provided services. Despite the more intense engagement provided by the private providers, Rehwald et al. (2017) found client satisfaction to be higher with public providers.

Finn (2011) reviewed literature and impact studies on contracted employment services in Europe, including case studies from Britain, Germany, France, and Sweden demonstrating variations in types of subcontracted programmes, implementation, and impacts. Evaluation of intensive employment and training programmes in Britain, including Employment Zones and a New Deal for Disable People programmes, found that both programmes had a positive impact on long-term unemployed people, but the employment zones were more effective (29). In Germany procurement reforms reduced bid competition and evaluations demonstrated worse outcomes with a probability of unemployment rising by 7% for short-term unemployed people. However, the long-term unemployed population had varied effects, with positive impacts for hard to reach groups but negative outcomes for those with recent work experience (29). French contracted services increased employment by 4-9% but the public employment services reached more populations, with an effect that was "about twice as large" (29). Results from Sweden demonstrated better employment and wage outcomes for immigrant populations after 12 months, but worse outcomes than the PES for younger jobseekers (30). Regardless of the type of subcontracting, Finn (2011) does highlight the importance of having constant "monitoring, evaluation, and modification" of contracts, including quality information systems to track data and participant experiences. Overall the variation of findings demonstrate that private, contracted employment services can, in certain circumstances with quality contractual arrangements, improve employment outcomes for certain jobseekers.

As noted throughout this section, a variety of factors contribute to unemployment and, more particularly, long-term unemployment. Evaluations of programmes designed to measure the success of these programmes must account for the complexities of data related to these populations. Given that the long-term unemployed are not homogenous, the results of any intervention must be interpreted across different sub-cohorts. The following section gives an overview of cluster analysis, which was used in this analysis to capture the complexities of jobseekers in Ireland.

Cluster analysis: applications for similar evaluation challenges

Cluster analysis is a useful tool in the analysis of multivariate data and has been employed in this context for the following reason. The quasi-random referral process in JobPath means that very different jobseekers will receive the JobPath service at the same time. Compared to other labour market evaluations, there is little risk of results being compromised by a selection effect but the interpretation of results across different sub-cohorts is a more extensive task. Given that the long-term unemployed are heterogeneous and face a variety of different barriers to employment, it is useful to divide the population into segments to understand where JobPath works better or less well.

Cluster analysis has uses applicable to a variety of disciplines. The ultimate aim of a cluster analysis is the identification of homogenous or similar sub-groupings of subjects, whether it be countries, corporations, households or individuals, in accordance with selected variables, such as population density, unemployment rate, earnings or age (Řezanková, 2014). The following studies employ some form of clustering technique to conduct analysis.

Common forms of clustering include hierarchical clustering, which attempts to find a hierarchical ranking of the identified clusters, k-means and non-hierarchical clustering. Generally, each clustering approach includes a number of core preparatory steps including: the selection of objects and features that define them, data transformation, selection of measures of distance, selection of the clustering method and a decision on the appropriate number of clusters (Florczak, Jabłonowski and Kupc, 2015).

Bánociová and Slavomira (2017) set out to examine spending on Active Labour Market Policies (ALMPs) in the context of changes to unemployment levels and assess the competitiveness of these policies in 21 European Union member states. In order to assess the competitiveness of funded ALMPs, the authors employ non-hierarchical clustering and find that, as the crisis unfolded, the make-up of these clusters began to change. The authors find the most effective resource allocation, combined with the lowest unemployment rates, in Nordic countries and Luxembourg.

A recent OECD paper by Browne et al. (2018) entitled “Faces of Joblessness in Ireland” uses latent class analysis to measure and explore the employment barriers faced by Irish individuals with low levels or lack of labour market attachment, using EU-SILC (Survey on Income and Living Conditions) household-level micro-data. After creating a set of indicators within the groupings of work-related capabilities, incentives and employment opportunities, a clustering approach is applied to pinpoint latent groupings of people facing similar employment barriers. Some latent classes or clusters of individuals are identified, each with a set of employment barriers distinct from other groupings.

Another labour market study employing cluster analysis is Ross and Holmes (2017). While the “out-of-work” or “unemployed” are often viewed or discussed as one general grouping, Ross and Holmes seek to emphasise the opposite. It extends the subject of its analysis beyond unemployed people to include a range of cohorts with varying intentions to seek employment. Employing complete linkage agglomerative hierarchical clustering, the overall out-of-work population is sorted into relatively homogenous clusters.

Evaluations in a dynamic treatment environment

In the evaluation of labour market programmes the standard experimental approach of establishing control and treatment groups often may not be applicable in its traditional form. This issue of simultaneity arises from the fact that the key outcome variable (jobseeker

labour market status) and a jobseeker's treatment status (whether or not they took part in the programme) are both functions of the potential unemployment duration. Consequently, a number of papers have set out to specifically explore this problem of dynamic treatment assignment. Sianesi (2004) examines Sweden's Active Labour Market Policies, which operate in a dynamic treatment environment rather than a static one, given the fact that programmes are consistently ongoing and any jobseeker has the potential to become a participant. Sianesi employs a non-parametric approach and estimates effects by examining the impact of joining the treatment or programme at a given period of unemployment, versus not joining (at least up to that point). Thus, the control group or basis of comparison is those people who are jobseekers up until a given point in time and have not taken part in the programme at least up to then. Therefore, as Vikström (2017) puts it, Sianesi essentially converts this dynamic treatment problem into a static one through this approach.

Vikstrom (2017) proposes a solution to the complexities of dynamic treatment assignment by selection on time-variant covariates and a dynamic inverse probability weighting (DIPW) estimator for the average treatment effect on the treated in a certain period. This compares those treated against no treatment now or thereafter. This approach is applied to a Swedish work practice programme aimed at increasing the skills of unemployed people over 2003-2006, with results demonstrating employment rate increases 15 months after enrolment.

The DIPW involves weighting the treatment and control group for each time period and estimating a counterfactual survival rate. Participation in the programme results in increased employment rates compared to those who did not participate.

Pathways to Work evaluations

In order to measure the success of the Pathways to Work strategy, an intrinsic element of the strategy is the suite of evaluations on activation programmes. This section provides an overview of the evaluations under Pathways to Work, all of which are carried out using DEASP administrative data.

The Department of Employment Affairs and Social Protection has itself, or in association with the ESRI and Indecon, produced a number of evaluations of specific schemes in recent years. In summary these indicate that schemes with a strong employer connection, such as JobBridge and the Back to Work Enterprise Allowance scheme, have markedly positive impacts. However, echoing O'Connell (2011), the evidence in respect of long-duration general education schemes is not encouraging as employment impacts appear to be negative.

The first evaluation to employs the Jobseekers Longitudinal Dataset (JLD) is the ESRI's evaluation of the Back to Education Allowance (BTEA), by Kelly et al. (2015), which describes the creation of the JLD as "a significant step forward in Ireland's data collection approach". While the overarching goal of the study was to examine the effectiveness of the BTEA in aiding jobseekers to progress toward employment, it also served as "a 'pathfinder' with regard to the use of the JLD as a tool for evaluating the effectiveness of the Department's activation programmes. The results find jobseekers who began a second chance education programme at second level in September/October of 2008 were 28 to 30 percentage points less likely to have left the Live Register in June 2012, relative to a control group with similar unemployment durations. Those pursuing the third level path from September/October 2008 were 14 to 23 percentage points less likely to be in employment in June of 2012, as well as June 2014, when compared to the control group.

The Back to Work Enterprise Allowance (BTWEA) aims to encourage long-term unemployed people to take up self-employment, with participants allowed to retain a portion of unemployment assistance payment for two years while setting up a new business. Cronin et al. (2017) sought to estimate the impact of the BTWEA on whether those who participated on the programme were more likely to be in employment (either self-employment or as an employee) for participants who started the programme between May 2009 and the end of 2011. The evaluation finds the treatment group were more likely to be in employment at six and 18 months after completion, concluding that the programme has a positive impact on participant employment rates of 27 percentage points, although this effect is moderated when the control group only includes those with an interest in self-employment.

Indecon International Research Economists conducted an evaluation of JobBridge activation programme. With the JobBridge, participation was based on self-selection, and impact is estimated using Inverse Probability Weighted Regression Adjustment (IPWRA) estimator as well as Propensity Score Matching. From this model, Indecon's analysis indicates that completing a JobBridge internship increased the likelihood of finding employment within 12 months by approximately 12 percentage points, from 36.6%.

A forthcoming evaluation (Kelly et al, 2019) will estimate the impact of the introduction of the Intreo reforms using a difference in differences design by comparing the offices that switched to the Intreo model in the early phase with a control group consisting of offices implementing the NEAP PES system at the time of the evaluation.

An evaluation of the employment impact of JobsPlus – a collaboration between DEASP and the European Commission's counterfactual impact evaluation experts at the Joint Research Centre – is underway at present.

V Data and Description

The Jobseekers Longitudinal Dataset and additional administrative datasets

The Jobseekers Longitudinal Dataset (JLD) is an administrative dataset that tracks social welfare claims, activation and training, and employment histories over time, covering people with jobseeker or one parent family claims since 2004. It draws together payment and administrative data from the Department of Employment Affairs and Social Protection and data from SOLAS and the Revenue Commissioners. It has its origins in efforts to make best use of the sizeable volume of data collected or generated by the Department and to structure the recording of episodes of unemployment and training in a meaningful way.

The JLD is an innovative database that combines DEASP, Revenue and SOLAS data to produce a uniquely detailed view of the Irish labour market from the height of the economic boom to deep crisis and recovery. It contains information on a claimant's sex, age, marital status, nationality, educational attainment, previous occupation, employment and unemployment histories (duration and number of episodes), unemployment training history (type, duration and number of episodes), benefit type (JA, JB), spousal earnings (to qualify for an adult dependent allowance), number of child dependents, family payment type (i.e. adult and child dependent allowances, adult only, etc.) and geographic location. Through the development of the JLD, administrative data events are linked to episodes of welfare or work, thus enabling the better ex ante and ex post analysis of jobseekers.

The process of developing the Jobseekers Longitudinal Database (JLD) was initially informed by a 2011 overview commissioned by the DEASP with University College Dublin (Harmon, Morrin and Murphy 2011) of the DEASP's management of the Live Register and more generally its use and collection of data relating to the labour market. The report provided a great deal of insight into strategies to improve data collection and noted many challenges such as the duplication of data in various IT systems, missing information (i.e. education levels, reasons for signing off, destination of employment, etc.), a lack of a longitudinal reporting process, and the lack of a centralized and integrated data infrastructure. Therefore, in 2012, a rich analytical database consisting of approximately 13 million individual episodes of welfare and work since 2004 was developed to form the JLD.

The dataset takes operational data from a range of sources and rearranges them into a view of each individual's periods of unemployment, employment, and training. The data are structured in a way that bears some relation to a panel dataset but with important distinctions. To reflect the individual experience of employment and unemployment, the data are re-arranged as a series of episodes, with one episode beginning when the person begins a spell of unemployment and ending when the person moves to employment or another activation or training programme. The next episode begins when the person's employment or training status changes again. In this way, it differs from panel data in that observations are not recorded at a fixed point but at points of transition from one status to another.

One of the advantages of restructuring the administrative data of the Department in this way is that it retains some element of the individual's experience of unemployment. When a client of the Department of Employment Affairs and Social Protection moves from Jobseekers Benefit to Jobseekers Allowance, it is treated as an exit from the former and an entry to the latter on the Live Register. In the JLD, contiguous periods on Jobseekers Benefit and Jobseekers Allowance can be linked and represented as one episode of unemployment, which is arguably a better representation of the experience of the absence of work,

regardless of whether it is on a social insurance or social assistance programme of income support.

The JLD has been used for a variety of analytical tasks and published evaluations. For this exercise, it was supplemented by DEASP data on earnings from employment (collected on behalf of the DEASP by the Revenue Commissioners for PRSI purposes) social welfare payments data, and social welfare status data. This means the analysis is informed by a wider understanding of a person's labour market status before and after becoming eligible for referral to JobPath.

For earnings from employment data, what appear to be data entry errors are excluded by dropping observations where:

- earnings per week were greater than €352 and
- the proportion of total PRSI per week to earnings per week is less than 3.5%

Where the JLD only captures jobseeker and One-parent Family Payment status (payments such as Jobseekers Allowance, Jobseekers Benefit, casual jobseekers), this evaluation is enhanced by data on receipt of other weekly social welfare payments such as Disability Allowance and Carers Allowance, as well as in-work benefits such as the Working Family Payment (previously Family Income Supplement).

Description of data

Throughout the paper, results are estimated in respect of Q1 2016. All open claims on the Live Register in Q1 2016 are divided into treatment and control groups (those who receive the JobPath service and those who do not). The sample size is trimmed according to the follow steps:

- Removing those over the age of 60 (accounting for operational activation practices)
- Removing those with durations of unemployment under 365 days to capture only those in long-term unemployment
- Removing those who have already received the JobPath service

Adjustments	Number of observations
All Live Register claims open end-2015	327,031
Minus those who: Have no JobPath eligibility at Q1 2016 based on claim type (credits or casual claims)	- 97, 618
Are over 60 years of age	- 17, 305
Have done JobPath previously	-51
Have a Live Register Duration <365 days (short-term unemployed)	- 108, 620
Remaining JobPath Evaluation Population	**103, 437**

Table 8: Adjustments made to the Live Register to make the JobPath sample size

For comparison, the Live Register figures for January, February and March are outlined in Table 9. The published Live Register figures differ slightly in that claimants over 65 are excluded from the Live Register but appear on the JLD (see exclusions, Table 8, above). Also, the Live Register includes claims pending at the time of publication, whereas any claims that have been dropped subsequently, or not awarded, will not appear on the JLD.

Month	Total
Jan-16	321,513
Feb-16	319,449
Mar-16	315,364

Table 9: Live Register Figures for Q1 2016; Source: CSO, LRM17

A straightforward measurement of the average outcome for those who participate in JobPath (the treatment group) and those who do not (the control group) will give an estimate of the impact of JobPath if the treatment and control groups are balanced. In other words, if the two groups look similar on the basis of the data we record before commencement of JobPath, the impact can be measured by comparing the average outcome for each group. However, if the two groups look different before commencement, then such a measurement could reflect existing differences and not the impact of JobPath.

Some descriptive statistics of the two groups will indicate to what extent they differ prior to the treatment.

Personal Characteristic	Control	Treatment
Sex (Share of Group)		
Male	69	72
Female	31	28
Median Age	38	40
Marital Status		
Single	0.72	0.72
Married	0.28	0.28
Widowed	0.00	0.00
Family structure		
No Adult or Child Dependent Allowance	0.64	0.62
Child Dependent Allowance only	0.12	0.11
Adult Dependent Allowance only	0.06	0.07
Adult and Child Dependent Allowance	0.18	0.21

Table 10: Personal Characteristics of the Control and Treatment groups

While the personal characteristics of the control and treatment groups are relatively similar (Table 10), it is evident from Table 12 that there are differences in the mean earnings of the two groups. More specifically, the mean earnings of the control group are higher than the treatment group and the mean duration in days of unemployment for the treatment group is slightly higher than the control group.

Labour Market History	Control	Treatment
Mean Earnings in previous year(Euros)		
	1,411	698
Mean Unemployment Duration (Days)	1,530	1,841
Previous occupation (Share of Group)		
Unknown, Not Stated, or Never Worked	0.08	0.08
Other Occupation	0.15	0.17
Plant and Machine Operatives	0.18	0.19
Sales and Customer Service Occupations	0.09	0.09
Personal and Protective Service Occupations	0.11	0.11
Craft and Related Occupations	0.23	0.24
Clerical and Secretarial Occupations	0.07	0.06
Associate Professional and Technical Occupations	0.03	0.02
Professional Occupations	0.03	0.03
Managers and Administrators	0.03	0.02

Table 11: Labour Market history of the Control and Treatment groups

Furthermore, while Table 12 suggests the Live Register history of both groups is relatively similar, the Treatment group has, on average, received a higher total in social welfare payments from 2013 to 2015. As evident in Table 12 this trend continues with the treatment group having a higher mean of social welfare payments in 2017 and significantly lower mean earnings in 2017.

Social welfare payment history	Control	Treatment
Live Register History (Share of Group)		
Jobseekers Allowance (UA)	0.80	0.82
Jobseekers Allowance to Benefit	0.00	0.00
Jobseekers Benefit (UB)	0.01	0.00
Jobseekers Benefit to Allowance	0.19	0.18
Mean Social Welfare Payment (Euros)	9,330.00	10,035.00

Table 12: Social welfare payment history of the Control and Treatment groups

Finally, as the evaluation examines outcomes across a period of an improving labour market, it is worth highlighting the changing profile of the Live Register and, particularly, the changing profile of those eligible for referral to JobPath.

Figure 15 outlines the increase in the median duration of days on the Live Register for each quarter after the sample has been adjusted (see Table 8). The value increases from 880 in Quarter 2 of 2014 to 1,025 in Quarter 3 of 2016. In general, those with shorter durations of unemployment have a higher chance of finding employment whereas those eligible for JobPath in the later periods have been unemployed for longer durations, which suggests they face greater barriers to finding employment.

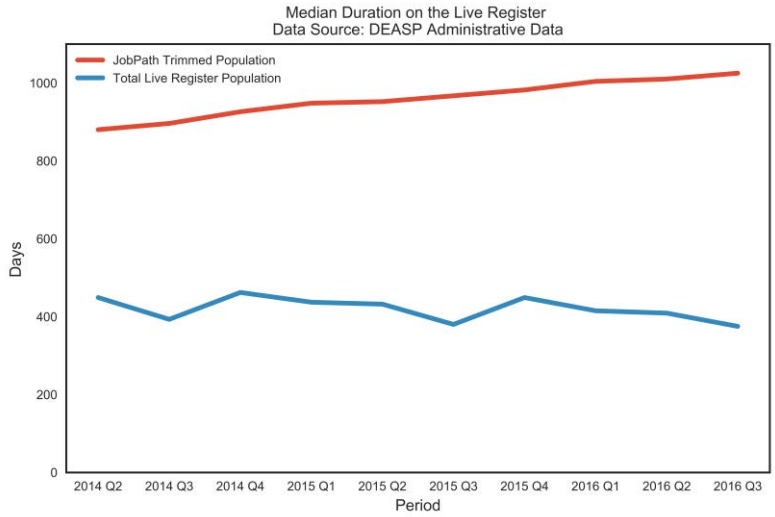


Figure 15: Median Duration of days on the Live Register

This means the evaluation can provide results on the impact of JobPath in respect of an increasingly challenging objective – finding employment for the long-term unemployed as the duration of those referred to the service is increasing. However, for any given period, the comparison is always between treatment and control cases in that period.

Cluster modelling

One of the novel features of this evaluation is the use of cluster analysis to interpret the results of the impact of JobPath. This recognises that jobseekers are not a homogenous group. Any programme or service can be expected to have a different impact on different jobseekers and what works particularly well for some will work less well for others.

The cluster analysis has two functions:

- It provides new information about the population of the Live Register at any given point in time (not restricted to those eligible for JobPath), and
- It aids in enriching and nuancing the estimate of how JobPath affects different cohorts.

An important feature of this exercise is that it uses an unsupervised approach to generating clusters. Statistics on jobseeker numbers and unemployment are often reported in respect of how jobseekers fit pre-determined criteria (for example, whether the duration of unemployment is over 12 months, whether they are under 25 years).

It is, of course, useful to track over time the number of people with durations over 12 months and to compare absolute levels for different age categories. In certain circumstances, however, this approach of deterministic grouping can be a somewhat blunt analytical instrument. For example, those with 11 months' duration may be quite similar to people with 13 months' duration but a strict categorisation by duration places them in separate categories.

In contrast, the cluster analysis approach does not start out by deciding how many categories of jobseeker exist or by specifying any characteristics a cluster should have. Instead, probabilistic modelling is used to segment the Live Register into cohorts. A rich dataset is compiled and a clustering algorithm calculates the optimal number of clusters, so

that each cluster is, to the greatest extent possible, internally consistent (individuals in the same cluster are similar to each other) and distinct from other clusters (individuals in one cluster are different from those in other clusters).

The result is a set of clusters using all of the available data to describe the jobseeker population (not just those eligible for JobPath). The labour market data takes five years of claims and earnings from employment data to construct a labour market history for each individual. This probabilistic approach means each jobseeker is assigned to the cluster to which he or she is closest, as there are no explicit membership criteria. For each cluster created in this process, we describe the cluster as having a higher share of jobseekers with certain characteristics:

- Younger Casual Claimants
- Younger Professionals
- Intermittent Labour Market Attachment
- Shorter Durations
- Older, With Strong Employment History
- Self Employed
- Longer Durations

The clustering approach is as follows:

- At the beginning of each quarter, from the entire Live Register population, create a set of clusters that include people who are similar, based on personal and labour market characteristics (such as age, sex, location, family structure, previous occupation, previous earnings) and employment, welfare and training history up to that point in time (duration of unemployment, any episodes of casual employment, participation in activation to date).
- Each cluster will reflect a broad similarity among its members at that point in time. Membership of a given cluster will evolve over time, as individuals who remain unemployed become longer unemployed; those who have increased their skills in the interim become part of a more skilled group etc.

Since each cluster is created using a probabilistic approach, membership of a given cluster changes over time. As new jobseekers join and others leave, the population changes. We can test cluster stability by examining movements of jobseekers and comparing those who remain in the same cluster over time, those who move to another cluster, or those who leave the cluster population (i.e exits from unemployment claims). Detailed findings in the appendix show the cluster populations remaining broadly stable. Only a small share of the population transitions from one cluster to another during the time periods.

In summary, the clustering exercise provides us with a greater understanding of the entire Live Register population (of which the long-term unemployed are one part), and allows us to interpret the impact of JobPath for distinct cohorts (i.e. separate estimates for clusters with a greater share of long-term unemployed people in the 40-50 age group or with a greater share of people with a particular sectoral background).

The clusters are described in further detail next, again using Q1 2016 as a sample quarter, with further detail on the technical processes behind the clustering process at the end of the section and in the appendix.

Cluster characteristics

Younger Casual Claimants

This cluster is the youngest cohort, and includes people on casual jobseeker claims with short spells of unemployment durations. As the youngest cohort, they have earnings only in the previous calendar years but have the second highest median number of weeks of insurable employment. This cluster has a large share of Craft and Related Occupations (31%) but a low share of managerial and professional occupations (11%), which can be partly attributed to the young age of jobseekers in this cohort. This cluster includes jobseekers on casual jobseeker claims, meaning they are in part-time work of fewer than four days and receive an unemployment payment in respect of the days not worked. Generally, this cluster can be categorized as younger, casual claimants with short unemployment durations.

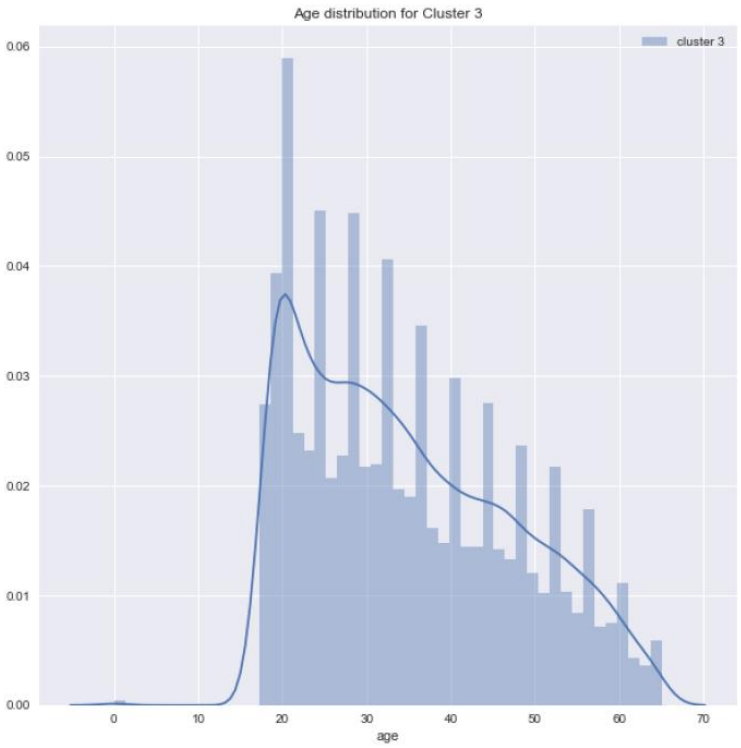


Figure 16: Younger Casual Claimants age distribution

Younger Casual Claimants	
Population	30, 637
Eligible for JobPath	33%
Male: Female	70:30
Employed in the 5 preceding years	87%
Median unemployment duration	175 days

Table 13: Descriptive characteristics of the Younger Casual Claimants cluster

Younger Professionals

This cluster can be classified as young individuals with high weeks of previous employment, short spells of unemployment, and high numbers of people previously in professional occupations. The majority of people in this cluster are under the age of 30. Unlike the other clusters, which are male dominated; this cluster broadly has the same ratio of men (53%) to woman (47%). Following the Short-Term Unemployed, this group has the second highest number of weeks of insurable employment. This cluster's labour market attachment is above average, with 97% having been in employment at some point in the five preceding calendar years. This cluster is above average in the share of jobseekers reporting previous professional occupations.

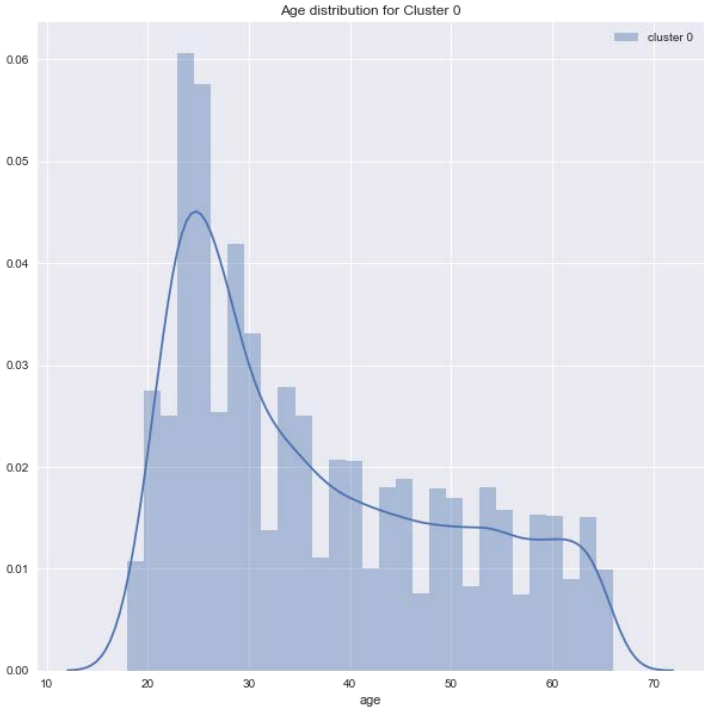


Figure 17: Younger Professionals age distribution

Younger Professionals	
Population	16,061
Eligible for JobPath	39%
Male: Female	53:47
Employed in the 5 preceding years	97%
Median unemployment duration	200 days

Table 14: Descriptive characteristics of the Younger Professionals clusters

Intermittent Labour Market Attachment

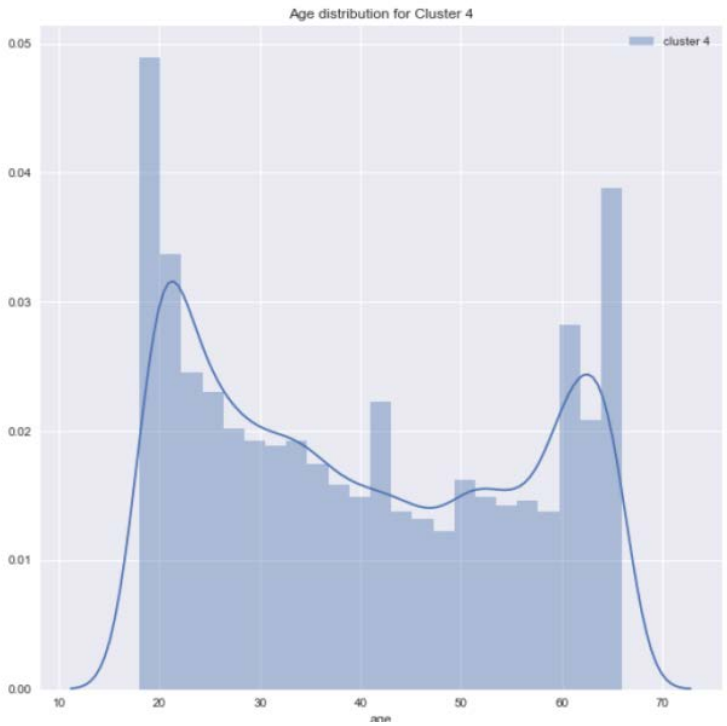


Figure 18: Intermittent Labour Market Attachment age distribution

This group contains individuals from a range of ages who have been in and out of the labour market over the past five years, with multiple spells of unemployment and low median weeks of insurable employment. This cohort contains people at both ends of the age spectrum, with a mix of old and young people but more of the latter. In this cluster, jobseekers tend to have low median weeks of insurable employment. Within this cluster, 82% of individuals previously had higher ranked occupations, such as Craft and Related Occupations and Clerical and Secretarial Occupations. Generally, these individuals are in and out of the labour market, with little to no sign of labour market attachment.

Intermittent Labour Market Attachment	
Population	18,258
Eligible for JobPath	39%
Male: Female	62:38
Employed in the 5 preceding years	83%
Median unemployment duration	221 days

Table 15: Descriptive characteristics of Intermittent Labour Market Attachment group

Shorter Durations

This group has a majority of jobseekers between 30 and 40 years of age, and is characterised by short-term unemployment, moving out of the Live Register quickest in comparison to other clusters. Similar to the Young Professionals, this cluster differs from the majority of clusters that are male dominated, with a broadly similar share of men (56%) to women (44%). These individuals have strong labour market attachment, with an above average share (95%) of jobseekers that were previously in employment in the preceding calendar years. In this cluster, those with previous professional occupations have a significantly lower unemployment durations compared to other clusters. It has an above average share of jobseekers whose previous occupation was in clerical and secretarial positions.

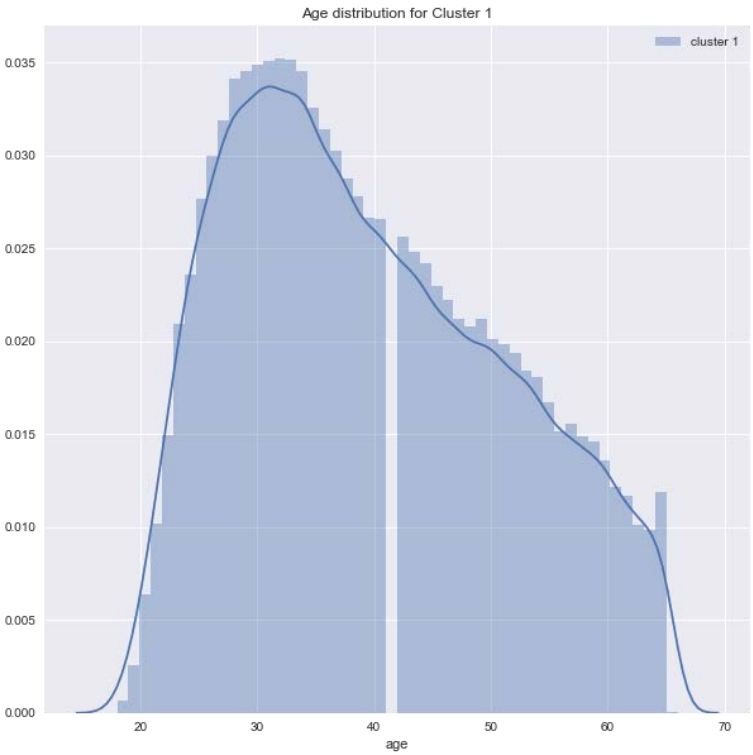


Figure 19: Shorter Durations age distribution

Shorter Duration	
Population	121, 932
Eligible for JobPath	45%
Male: Female	56:44
Employed in the 5 preceding years	95%
Median unemployment duration	242 days

Table 16: Descriptive characteristics of Shorter Durations group

Older, With Strong Employment History

This group has a mostly older population who were previously in higher rank occupations, with little or no sign of labour market attachment and low median weeks of insurable employment. This cluster contains mostly older individuals and makes up 4% of the total population. Individuals in this cluster have shown little to no sign of labour market attachment, with low median weeks of insurable employment. Within this cluster, 88% of individuals previously held higher rank occupations, with the majority in Craft and Related Occupations. Furthermore, this cluster has shown the least age variation of previous occupations. In sum, this cluster can be classified as individuals who will likely retire in the near future.

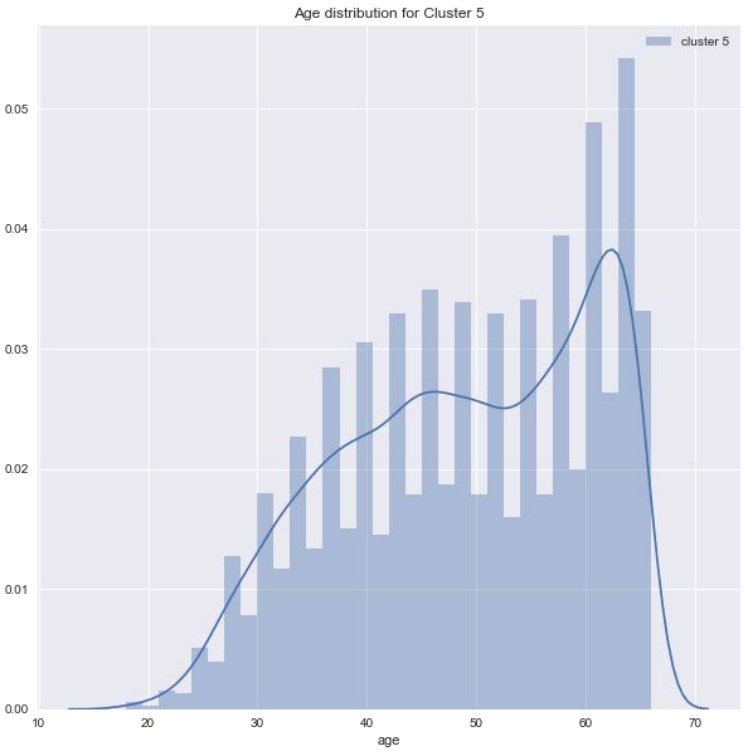


Figure 20: Older, With Strong Employment History age distribution

Older, With Strong Employment History	
Population	12, 789
Eligible for JobPath	51%
Male: Female	63:37
Employed in the 5 preceding years	87%
Median unemployment duration	305 days

Table 17: Descriptive characteristics of the Older, With Strong Employment History cluster

Self-Employed

This group has individuals on both ends of the age spectrum, but more of these individuals are older and often self-employed prior to their claim, with the second highest median unemployment duration. They have weak labour market attachment and their average claim duration is the second longest among all the clusters. Among those who were employed within this cluster, 85% held higher rank occupations and this cluster has a large share of previously self-employed individuals.

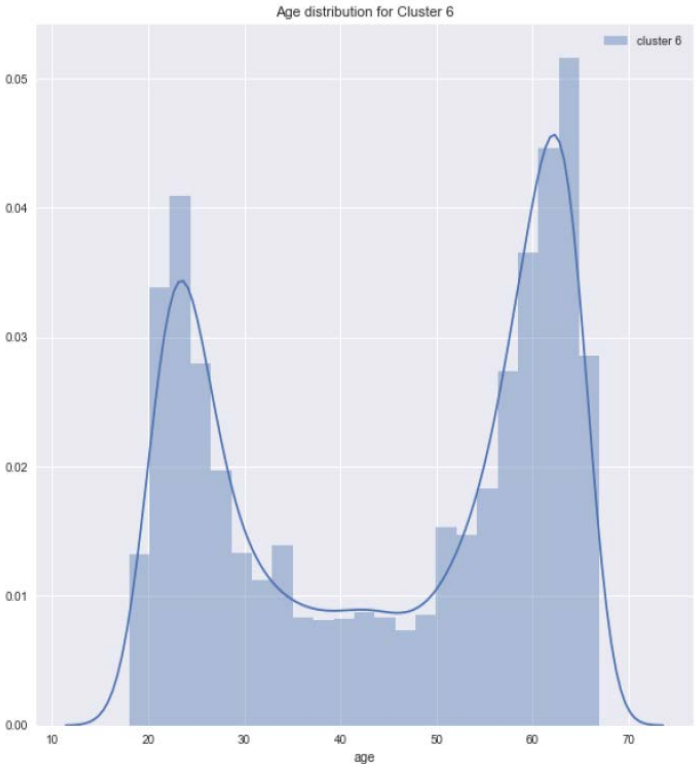


Figure 21: Self-Employed age distribution

Self-Employed	
Population	29, 408
Eligible for JobPath	67%
Male: Female	61:39
Employed in the 5 preceding years	84%
Median unemployment duration	661 days

Table 18: Descriptive characteristics for the Self-Employed cluster

Persistent Longer Durations

This group can be classified as the longest unemployed individuals from the widest range of ages, and the cluster with the highest share of JobPath eligible jobseekers. This cohort is the farthest from the labour market, with only 56% having had an episode of employment in the past five years. This figure is below the average of 80% for other clusters. This weak labour market attachment is reflected in the cluster's median earnings of 0 in the last 3 years. This cluster has a concentration of those whose previous occupation was plant and machine operatives (14%) and the lowest share of those who were previously in managerial or professional occupations (7%). Overall, this cluster includes the longest unemployed individuals, who are furthest from the labour market.

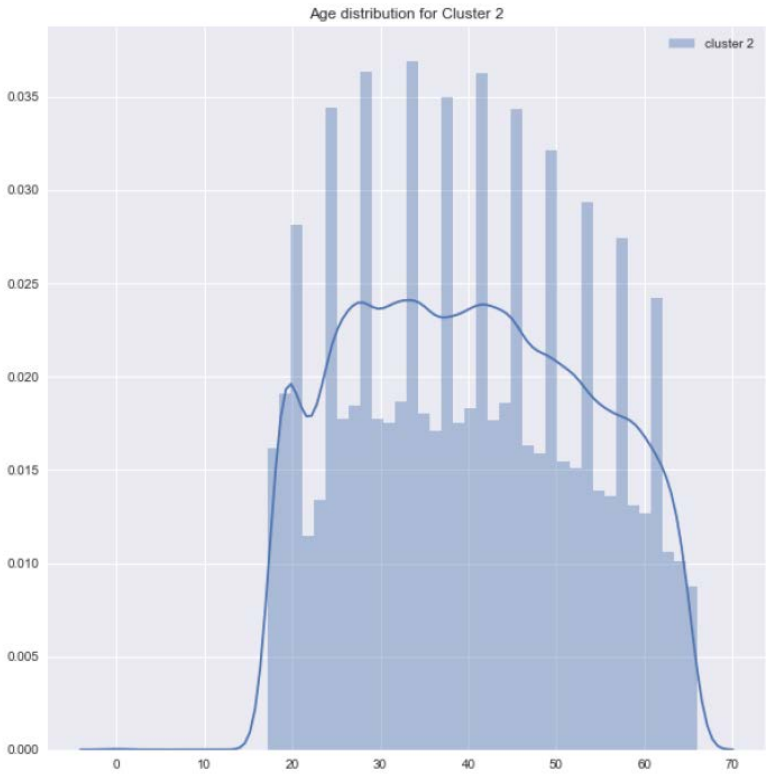


Figure 22: Persistent Longer Durations age distribution

Persistent Longer Durations	
Population	97, 946
Eligible for JobPath	82%
Male: Female	65:35
Employed in the 5 preceding years	56%
Median unemployment duration	1, 534 days

Table 19: Descriptive Characteristics for the Persistent Longer Durations cluster

Technical description of clustering methodology

The first phase in the cluster analysis process is data extraction, transformation and loading. This process began with the JLD in its original format, which is transformed into a CSV dataset and in turn into a SQL table of client-centred labour market and income data. A detailed description of this process can be found in Appendix 1.

Clustering and feature selection is done in accordance to the following sequential processes:

1. Variable selection via statistical profiling and business insight
2. Assessment of the number of clusters
3. Feature selection via associated supervised task

Due to the complexity of the JLD and the business processes from which data is derived, the variables that describe the different phases of people's unemployment history may suffer from a lack of diversity or an excess number of missing values. In the context of clustering, and more generally with unsupervised and supervised learning, variables that are constants across a dataset do not play a role for model estimation. Similarly, variables that exhibit a large ratio of missing values pose problems for modelling.

In order to minimise modelling problems in successive steps, we implement a simple filtering schema based on the statistical properties of the variables: constants and variables with a ratio of missing values bigger than a defined threshold are not selected for clustering and feature selection. As a second step, we consider variables' cross-correlation and select as candidate variables for removal those that exhibit strong correlation. Finally, subject matter expertise and general understanding drives the final selection of variables, so to ensure that the mathematical procedures have the correct business drivers, although some of the statistical requirements may not be met.

The number of clusters is assessed comparing standard metrics used in statistics and machine learning for model selection: Bayesian Information Criterion (BIC) and Akaike Information Criterion (AIC). Both methods are related and grounded in information theory – they are applied to estimate the relative information lost when a given model is used to represent the process that generated the data. From a methodological point of view, the goodness of fit of Generalised Mixture Models (GMMs) is assessed by calculating BIC and AIC while varying the number of clusters. To address variability in model fitting via Expectation Maximization (EM), GMM clustering is run multiple times with random initialisation accumulating BIC and AIC scores for each run and for each number of clusters (e.g. from 1 to 20 clusters).[4] The number of clusters is estimated minimising both mean BIC and mean AIC curves, considering also twice the standard deviation of the mean as guidance for basic null-hypothesis testing. In the case that BIC and AIC curves suggest different number of clusters, the smaller number is selected (on the basis of Occam's razor, with the simpler hypothesis selected).

The importance of the variables used for clustering is assessed re-casting the unsupervised task into a supervised classification problem, using the clusters labels calculated by the GMM as class labels. To predict the class label, we split the data randomly in train set (66%) and test set (remaining 34%) and then train a Random Forest ensemble on the train set. The

[4] The Gaussian Mixture Model (GMM) is a clustering algorithm for density estimation which creates a generative probabilistic model that describes the distribution of the data. We extend the GMM to cluster multivariate longitudinal jobseeker data at every quarter (four points during the year) to identify similar patterns over time.

process is repeated multiple times with random initialisation, and feature importance is calculated as average importance over all runs.

VI Evaluation Approach

Estimation of JobPath Effects

This evaluation looks at those who received JobPath compared to those who were eligible to receive the service but did not receive it in Q1 2016. Before the roll-out of JobPath, options for long-term unemployed individuals were limited to the education and training programmes, public employment programmes such as Community Employment, or self-employment incentives, with no job search and assistance programme designed for, and offered specifically to, long-term unemployed people.

The JobPath programme is the first intensive job search and assistance programme targeted at the long-term unemployed. There is no systematic referral of those not selected for JobPath to another concurrent job search and assistance intervention. Accordingly, this evaluation will provide an insight into the broader question of whether intensive case management of the long-term unemployed works by comparing outcomes between those undergoing intensive case management and those not receiving the service.

As already outlined, one of the features of JobPath is that any long-term unemployed jobseeker is potentially eligible for referral for as long as he or she remains unemployed. As a result, the probability of being referred, as well as the likely employment outcome, changes over time.

As seen below, a number of people who did not start JobPath in Q1 2016 did commence subsequently. It is problematic to remove these people from this study since, by definition, they are people who remain unemployed long enough to start JobPath in later periods, so that excluding them would bias the remainder of the control group towards those who left the Live Register before they could receive JobPath. Equally, it is problematic to retain these cases in the control group because we know that they did in fact receive JobPath at a later point. The solution to this dilemma lies in applying dynamic treatment (see 'Further Analysis' below). In the present paper, however, all of those who do not start JobPath in Q1 2016 are retained.

Treatment	Control							
Received JobPath in Q1 2016	Received JobPath in Q2 2016	Received JobPath in Q3 2016	Received JobPath in Q4 2016	Received JobPath in Q1 2017	Received JobPath in Q2 2017	Received JobPath in Q3 2017	Received JobPath in Q4 2017	No JobPath in 2016 or 2017
5,581	24,096	9,015	7,687	4,393	2,668	1,832	2,028	52,835

Table 20: Those who were eligible for JobPath in Q1 2016 and those who received the service in subsequent quarters

Typically, reliable estimates of impact using counterfactual impact evaluation techniques require a comparison between those who received a service or participated in a programme (called the treatment group) and a similar group who did not receive the service or participate in the programme (the control group).

The design of JobPath has to address a difficult challenge in identifying a control group with a reliable counterfactual outcome, and therefore estimating the impact of JobPath, for two main methodological reasons:

- All jobseekers may be referred to a JobPath provider immediately or at a later point in time, which rules out a straightforward comparison between those referred to JobPath and those not referred. The key outcome variable (jobseeker labour market status) and a jobseeker's referral status (whether or not they took part in JobPath) are both functions of the potential unemployment duration. At the same time, the referral process means a jobseeker can enter JobPath at any point beyond 12 months in an unemployment episode.
- The measured effect of JobPath is contingent on the time when referral occurred and the time that has elapsed since referral. For this reason, subsequent analysis will attempt to measure who does better – jobseekers referred soon after becoming eligible or jobseekers referred to JobPath long after passing the eligibility threshold.

The selection process for JobPath – how long-term unemployed people are referred to the programme – is also relevant for the evaluation framework and the application of the dynamic treatment assignment method:

- The Department of Employment Affairs and Social Protection (DEASP) selects jobseekers on a random basis for referral to JobPath. More precisely, all long-term unemployed people who are on the Live Register, aged between 18 and 61 years old (inclusive), are categorised into groups based on their unemployment duration (i.e. 1-2 years, 2-3 years, etc.).
- Selection for referral is by means of a system-based stratified random sampling using the groupings defined above.

While the stratified random selection identifies the sample of long-term unemployed people to be referred, it is possible that, at the level of local Intreo centres, the sample referred may not match the stratification of duration bands. Not every Intreo centre will be able to refer exactly the required number of long-term jobseekers in exactly the proportions that would correspond to a stratified random selection.

Furthermore, the stratified sampling generates a sample of jobseekers who are referred but do not necessarily commence the JobPath service (see Section III). As this evaluation measures the impact of receiving the JobPath service, being referred is a necessary but not sufficient condition for inclusion in the population of interest. When examining those who started JobPath in Q1 2016 (a subset of those referred) and those who were eligible but not referred, the distribution of the duration of the ongoing claim at that time is markedly different between the two groups. Figure 23 illustrates how the two groups vary, with a higher share of shorter claims (even though all are greater than 12 months) in the population of eligible but not referred jobseekers. As duration of unemployment is a significant predictor of future labour market outcomes, it is necessary to reweight the two groups - those who received the service and those who were eligible but did not - to ensure the measurement of outcomes at a later stage is a reasonable comparison.

On a related point, the amount of earnings from employment in previous years is another useful predictor of labour market outcomes. Again, the two groups differ somewhat in the years before JobPath is rolled out (2013-2015). As expected, the group with higher claim durations in the years preceding Q1 2016 have lower earnings from employment. Initial analysis shows that those who received the JobPath service increased their earnings by more (in absolute terms) but that they had lower earnings in previous year.

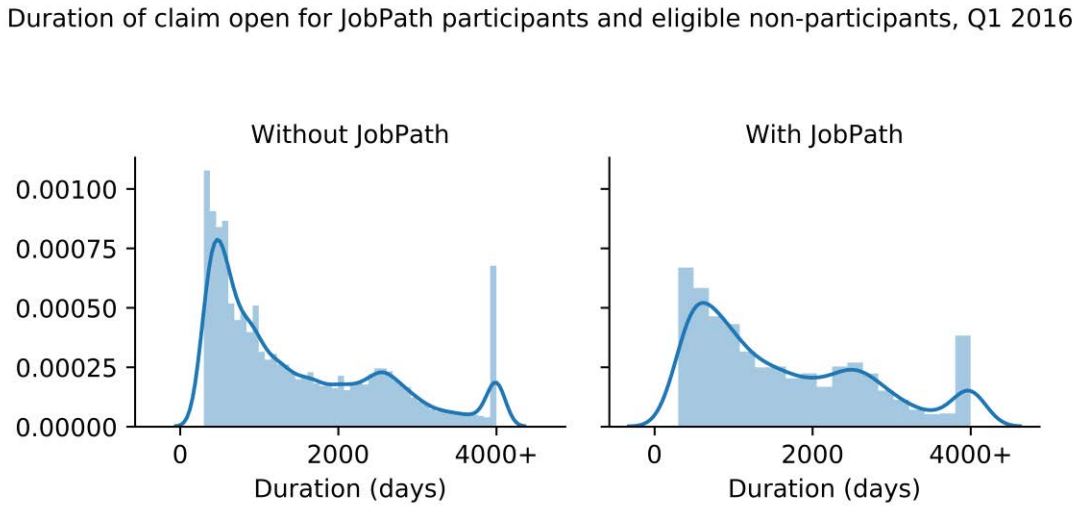


Figure 23: Duration of claim open for JobPath participants and eligible non-participants, Q1 2016

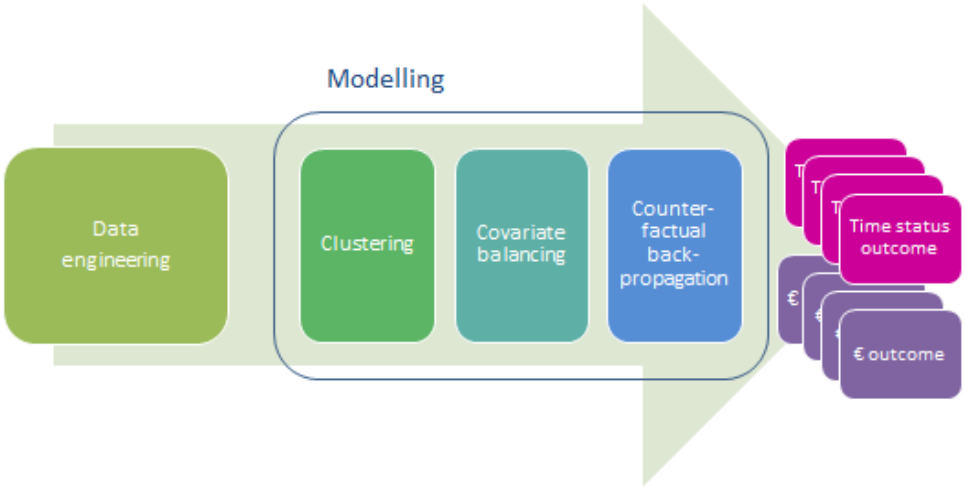


Figure 24: JobPath evaluation model pipeline

The process of evaluation begins by selecting the eligible jobseekers in a given quarter and dividing them into those who were eligible but did not start JobPath or exit the Live Register, in that quarter and those who started JobPath. The pool of eligible people – both those who start JobPath in subsequent quarters and the diminishing pool of people who are eligible to be referred to JobPath but do not start the programme and do not exit the Live Register – are tracked across successive quarters.

Next, the probability of treatment is estimated using logistic regression with a binary outcome of treated, or not, in a given period. Figure 26 shows the receiver operating characteristic (ROC) curve for the regression model. This shows the measure of success in separating the distribution of propensity scores among the treatment and control groups. With a model that

can predict assignment, distributions of propensity scores among the treatment and control

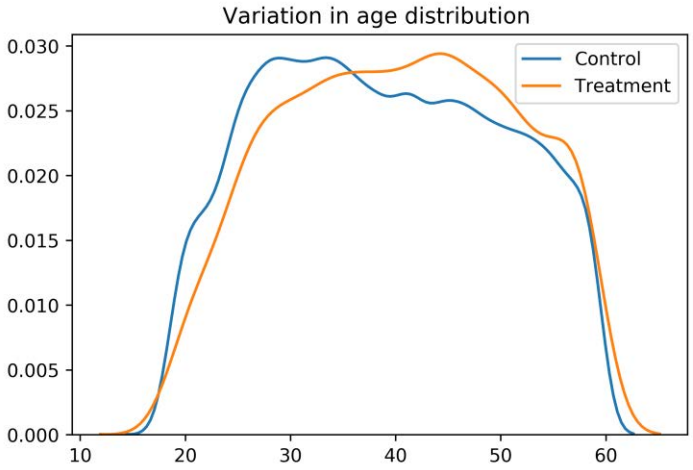


Figure 25: Age distribution for control and treatment

groups are separated and the score increases towards one. In this case, the distributions overlap to a large extent and the area under the curve is .59. This is because there is, within categories of claim duration, a substantial element of randomness to whether people are assigned to JobPath.

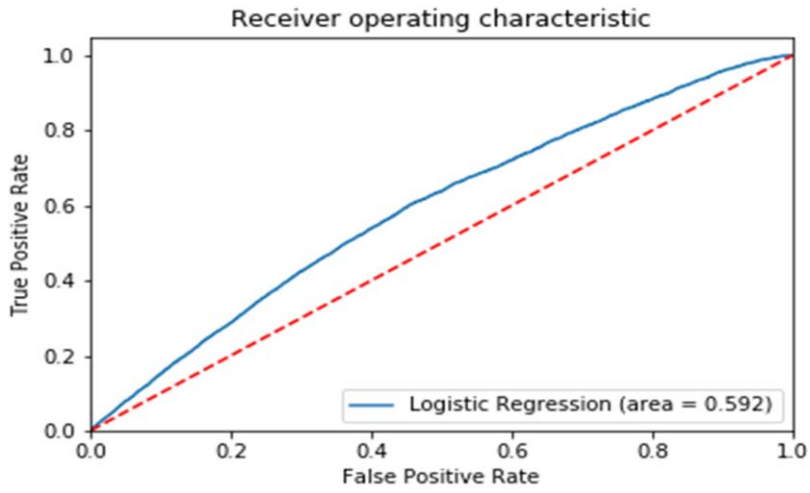


Figure 26: JobPath evaluation methodology: logistic regression

A consequence of this is that propensity scores occur within a narrow range and are largely overlapping for both groups, which means the inverse probability weights are modest.[5]

In summary, modelling the propensity of treatment can identify some more and less likely candidates but the use of stratified random sampling means it is difficult to predict, with any degree of success, who will be referred.

[5] Large weights can results from treatment cases with a low propensity score or control cases with high propensity scores. Such cases would require the calculation of stabilised weights - these are not necessary here in view of the fact that modest weights are applied to what is a narrow range of propensity.

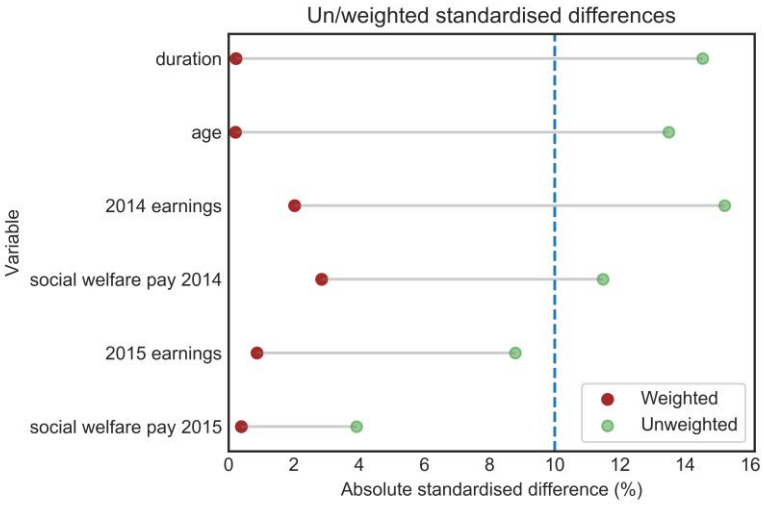


Figure 27: Weighted and Unweighted Standardized Differences

The logistic regression generates probability scores for each individual and allows us to estimate inverse probability of treatment weights – these are the reciprocal of the probability of the referral status (to JobPath, or not) that occurred. Adding weights to each observation in the control group means we can ensure the treatment and control groups are adequately balanced and, consequently, that any subsequent comparison of mean values reflects only their differing treatment status and not existing differences in their labour market characteristics.

Examining standardised differences shows the difference in values for the treatment and control groups before and after weighting. Given the degree of random assignment involved in referral to JobPath, it is to be expected that the unweighted covariates do not show extreme differences. The ten percent line in Figure 27 reflects a rule of thumb that a standardised difference[6] of less than 10% indicates that a covariate is adequately balanced between groups. For several unweighted variables, the standardised difference was over 10%. Reassuringly, Figure 27 shows covariates are balanced after weighting is applied, as reflected in the difference between treatment and control approaching zero and well below the 10% threshold.

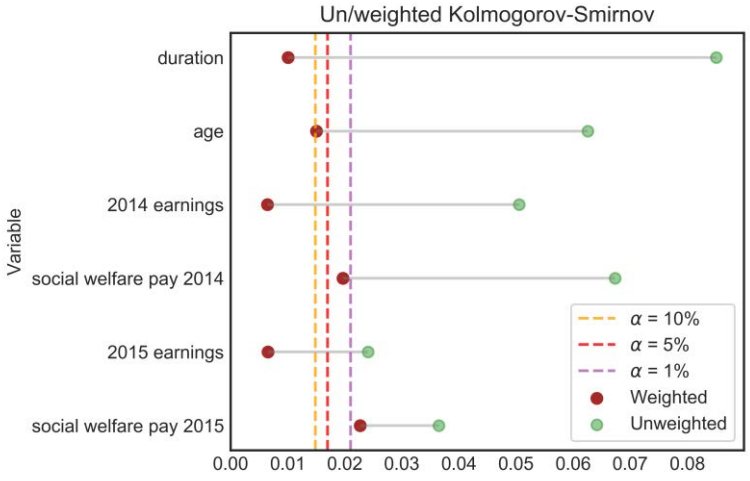


Figure 28: Weighted and Unweighted Kolmogorov-Smirnov statistic

As well as measures of central tendency, an examination of the distribution can reveal differences between the two groups (see Figure 27). Without some correction for these differences in mean values among key covariates, further analysis may reflect underlying labour market trajectories and not necessarily the impact of JobPath. The Kolmogorov-Smirnov test measures the furthest points between the two groups across the entire distribution.

To examine how similar the distributions are, we calculated the p-value (α) for each variable at which we would reject the null hypothesis that treatment and control come from the same

[6] Standardized difference is the difference in the mean of a variable between two groups divided by an estimate of the standard deviation of that variable and is used to measure effect size (Austin 2009).

distribution. For a given p-value (α), we rejected the null if the Kolmogorov-Smirnov statistic was greater than

$$c(\alpha)\sqrt{\frac{n+m}{nm}},$$

where

$$c(\alpha) = \sqrt{\frac{-\ln \alpha}{2}}$$

and n and m are the sizes of the 2 samples.

Using this criterion, the vertical dashed lines in Figure 28 show the thresholds for the Kolmogorov-Smirnov statistic for α = 10%, 5% and 1%. We reject the null for all the unweighted variables at the 1% level of significance. For the weighted variables, other than social welfare pay 2014 and 2015, we do not reject the null at the 1% or 5% level, or – with the exception of age – at the 10% level.

In conclusion, comparing treatment and control, the weighted variables have very low standardised differences and similar distributions for the following variables:

Figure 28 confirms weighting based on the inverse probability of treatment has resulted in samples with means that are similar for the covariates below, and that the distributions are similar after weighting for the following variables:

- total social welfare pay in 2014
- total social welfare pay in 2015,
- earnings from employment in 2014 :
- earnings from employment in 2015,
- duration of the current claim and
- age

The procedures outlined above – examining measures of central tendency and the distribution of variables – means the two groups are well balanced in respect of observable differences relevant to labour market outcomes.

The factors associated with labour market outcomes referred to here are the observed characteristics. Labour market outcomes are also driven by unobserved characteristics, such as ability, motivation, social skills etc. These are unobserved, and rarely susceptible to measurement, so observed data are often used as a proxy.

In the case of measuring the effect of an intervention, observed characteristics can be controlled for but unobserved characteristics cannot be. More problematically, the probability of choosing to participate in an intervention may be systematically correlated with labour market outcomes via some of these unobserved characteristics. This is the self-selection problem that many evaluations face. The more motivated jobseekers may, for example, choose to participate in a training course. If this motivation (an unobserved characteristic) is

also associated with better labour market outcomes, any evaluation that does not adequately control for this correlation will overstate the impact of the training.

A further challenge is dealing with administrative selection, where individuals do not automatically access a programme but are chosen from a pool of applicants by the programme administrators. If those who go on to participate are already more (or less) likely to succeed than the comparison group, and are chosen for this reason by the administrators, the programme effect will be overstated (or understated).

Both selection challenges are largely absent in this evaluation. Jobseekers do not self-select into JobPath, and the administrative selection process is based on a stratified random sample based on duration. At the point of commencement (not referral), JobPath participants have longer durations than in the comparison group and, consequentially, lower mean earnings in previous years.

The reweighting based on inverse probability of treatment gives two groups that are, on examination of key baseline covariates, well balanced. As a result, we can have more confidence that any observed differences in outcomes between weighted groups correspond to the effects of participation in JobPath.

Outcome Presentation Rationale: Earnings and Social Welfare Payments

The earnings of people in employment, when examined over a reasonable period of time, can give a useful indication of their labour market success. Conversely, total amounts received in social welfare support are a strong indication that people are in need of income assistance. Together, average earnings and average social welfare payments over a number of years when aggregated over a large number of jobseekers, can give us a solid indication of the impact of JobPath.

The circumstances surrounding long-term unemployed jobseekers are multifaceted and measuring outcomes only in financial terms may not provide the full picture. This evaluation attempts to capture the complexity and diversity of long-term jobseekers in Ireland. Due to the wide-ranging and complex nature of the Irish social welfare system, and the comprehensive set of supports it offers, it is always envisaged that some individuals may, at once, be in employment and also receiving social welfare support. For example, casual jobseekers are in employment while also receiving a partial jobseeker payment in respect of the days they are not employed. Therefore, the outcome measures account for the possibility of individuals receiving earnings from employment and social welfare payments in the same year, and possibly at the same time. This includes individuals receiving the Back to Work Enterprise Allowance, Back to Work Family Dividend or Working Family Payment, who are in employment while also receiving a weekly social welfare payment.

This can be further examined once additional modelling work has been completed such that any four-quarter period can be reported on and not just the calendar year. As the data in the evaluation cover the period cover social welfare income from 2013 to 2018 and earnings from employment over the period 2013 to 2017, the tables below (Table 21, Table 22 Table 23) outline the percentage change in earnings, the percentage change in the rate at which the main jobseeker payments have been paid, and the percentage change in the consumer price index in recent years.

Year	2013	2014	2015	2016	2017
Rate	-0.3	0.3	1.1	1.3	2.0

Table 21: Annual Earnings Rate Change
Source: CSO, EHA05

Jobseeker payment	2013	2014	2015	2016	2017
Jobseeker's Allowance- aged 26 and over	0.0	0.0	0.0	0.0	2.7
Jobseeker's Allowance - aged 25	-23.4	0.0	0.0	0.0	2.6
Jobseeker's Allowance - aged under 25	-46.8	0.0	0.0	0.0	2.7
Jobseeker's Benefit	0.0	0.0	0.0	0.0	2.7

Table 22: Social Welfare Payment Rate, percentage change on previous year
Source: DEASP Administrative Data

Year	2010	2011	2012	2013	2014	2015	2016	2017
CPI Change	-1.0	2.6	1.7	0.5	0.2	-0.3	0.0	0.4

Table 23: CPI Percentage Change on previous year
Source: CSO, CPA01

V. Results: labour market outcomes

Main Results: Earnings Social Welfare Payments

The earnings of people in employment, when examined over a reasonable period of time, can give a useful indication of how successful they are in the labour market. Conversely, total amounts received in social welfare support are a strong indication that people are in need of the social safety net represented by income support. Together, average earnings and average social welfare payments over a number of years when aggregated over a large number of jobseekers, can give us a solid indication of the impact of JobPath.

The results show a strong improvement in labour market earnings in 2017, the year subsequent to commencement in JobPath. Table *24* shows the difference in mean earnings between the treatment and the weighted control group. The effect of JobPath means those who received the service have earnings in 2017 €1,190 higher than the control group, representing an earnings gain of 35%.

This estimate is at the high end of the spectrum compared to the evaluations of similar programmes in other countries. This is worth noting considering that the effect attributed to the participation in JobPath should be interpreted as lower bound for two reasons. First, the estimation sample does not remove those referred to JobPath after Quarter 1 of 2016. This means that the control group includes also those who received JobPath in subsequent periods, who have probably higher earnings in 2017 compared to those who did not receive JobPath at all. Second, the focus on the first quarter of 2016, i.e. five months after the full roll out of the programme, means that the estimated effect does not take into account potential efficiency gains in the day-by-day administration of the programme at the local level. As described by Section VI, future analysis will extend the evaluation to other quarters and estimate the difference in impacts between early and late referral to JobPath (for those with a similar duration of unemployment and other relevant characteristics).

Mean Weighted Total Earnings, 2017 (€)	
Without JobPath	3,389.75
With JobPath	4,579.86
Difference	1,190.11
% Change	35%

Table 24: Mean Weighted Total Earnings, 2017 (€)

Mean Weighted Social Welfare Payments, 2017 (€)	
Without JobPath	10,491.81
With JobPath	10,067.29
Difference	-424.52
% Change	-4%

Table 25: Mean Weighted Social Welfare Payments, 2017, (€)

Mean Weighted Weeks of Insurable Employment, 2017	
Without JobPath	9
With JobPath	11
Difference	1
% Change	16%

Table 26: Mean Weighted Weeks of Insurable Employment, 2017

Data on earnings from employment up to and including 2017 values are complete. However, the 2018 values for earnings from employment are reduced across the board as they do not include the tax returns from self-employed people and company directors. The 2018 earnings data will be complete in early 2020, allowing some time for data cleaning subsequent to the 2018 deadline of November 2019. This means comparisons between 2018 earnings of those who participated in JobPath and those who did not will be artificially lower until the complete earnings file is available. However, as the reduction will most likely apply in equal measure to both groups, the comparison remains valid.

Mean Weighted Total Earnings, 2018 (€)	
Without JobPath	2,873.11
With JobPath	3,926.28
Difference	1,053.16
% Change	37%

Table 27: Mean Weighted Total Earnings, 2018 (€)

Mean Weighted Social Welfare Payments, 2018 (€)	
Without JobPath	4,860.75
With JobPath	4,403.78
Difference	-456.97
% Change	-9%

Table 28: Mean Weighted Social Welfare Payments, 2018 (€)

Mean Weighted Weeks of Insurable Employment, 2018	
Without JobPath	8
With JobPath	10
Difference	3
% Change	36%

Table 29: Mean Weighted Weeks of Insurable Employment, 2018

Variance between clusters

The clustering exercise outlined in Section V uses all of the available data to generate clusters of similar jobseekers. The tables below outline how JobPath participation leads to differing effects for each cluster. Effects indeed vary substantially between groups, confirming that intensive engagement with jobseekers is particularly beneficial for some of them. In absolute and relative terms, the earnings increase that can be attributed to JobPath

is largest for those with intermittent labour market attachment. However, JobPath participation leads to a significant improvement in earnings capacity for all clusters.

	Younger Casual Claimants	Younger Professionals	Intermittent Labour Market Attachment	Shorter Duration	Older, With Strong Employment History	Self-Employed	Persistent Longer Duration
Without JobPath	4089.49	4645.5	3923.19	4700.18	5499.41	3727.99	2651.43
With JobPath	6573.11	7177.27	7858.76	7224.1	6261.24	5030.86	3296.62
Difference	2483.6	2531.8	3935.6	2523.9	761.8	1302.9	645.2
% Change	61%	54%	100%	54%	14%	35%	24%

Table 30: Mean Weighted Total Earnings by Cluster, 2017 (€)
Includes all individuals with or without earnings in 2017

	Younger Casual Claimants	Younger Professionals	Intermittent Labour Market Attachment	Shorter Duration	Older, With Strong Employment History	Self-Employed	Persistent Longer Duration
Without JobPath	383.61	398.25	366.83	394.14	390.45	346.59	352.58
With JobPath	466.03	419.73	470.56	459.94	372.71	364.48	402.12
Difference	82	21.48	103.73	65.80	- 17.74	17.89	49.54
% Change	21.5%	5.4%	28.3%	16.7%	-4.5%	5.2%	14.1%

Table 31: Mean weighted earnings per week of insurable employment by Cluster, 2018 (€)
Includes all individuals with or without earnings in 2017

	Younger Casual Claimants	Younger Professionals	Intermittent Labour Market Attachment	Shorter Duration	Older, With Strong Employment History	Self-Employed	Persistent Longer Duration
Without JobPath	3453	3332.08	3488.28	3499.32	3546.55	4025.36	5752.55
With JobPath	3298.98	3461.62	3333.14	3683.38	3779.84	3893.88	4859.38
Difference	-154.0	129.5	-155.1	184.1	233.3	-131.5	-893.2
% Change	-4%	4%	-4%	5%	7%	-3%	-16%

Table 32: Mean Social Welfare Payment by Cluster, 2018 (€)
Includes all individuals with or without earnings in 2018

For all tables, clusters ordered by Unemployment Duration (and JobPath Eligibility)

Short Duration → Long Duration

A corollary of increased earnings from employment is a decreased reliance on income support provided by the Department of Employment Affairs and Social Protection. Table 32 outlines the decrease for each cluster in the payments made to those who received the JobPath service compared to those who did not.

When interpreting these results, it is useful to bear in mind the labour market context, as described in Section II. JobPath was a response to a major crisis in unemployment and in the ability of the PES to flexibly respond to large volumes of unemployment claims. It was rolled out in late 2015, when recovery and economic growth was already underway, leading to strong demand for labour and better employment opportunities for unemployed people. Notwithstanding the disadvantages faced by long-term unemployed people, those who received the JobPath service in Q1 2016 were seeking employment under favourable conditions. However, the comparison made here is only between jobseekers who face the same economic conditions, who have a minimum of one year of unemployment and, after weighting, have the same distributions across key variables associated with labour market outcomes. Therefore, we can say with confidence that the divergence in outcomes in 2017 is causally attributable to participation in JobPath.

VIII. Discussion of policy implications, future directions and conclusions

Policy implications

This analysis provides a robust estimate of the impact of JobPath in Q1 2016 and how it has affected employment outcomes in 2017. This provides strong evidence of a positive effect of systematic engagement with the long-term unemployed as delivered through a contracted public employment service with JobPath.

It is worth noting the factors that will affect the extrapolation of this impact to other time periods. The labour market improvement evident since 2013 means those referred to JobPath are looking for employment in favourable conditions. Furthermore, under these conditions, those who secure employment are more likely to be retained in employment. This should translate into lower expenditure on Live Register payments and higher payments to JobPath providers through job sustainment fees.

At the same time, as economic conditions continue to improve, those who remain unemployed long enough to be referred to the service are, *prima facie*, more difficult to place in employment, meaning a slower reduction in expenditure on Live Register payments and a slower increase in payments to JobPath providers through job sustainment fees. This means the cohort of long-term unemployed has changed somewhat since the initial roll-out of JobPath.

Given the inherent difficulty of designing performance pay metrics for contracted services when expenditure is dependent on an unknown future labour market context, this analysis provides an input into future contracted PES design while acknowledging the uncertainty in generalising to very different labour market contexts. Monitoring this effect over different points in the economic cycle can provide an understanding of how this effect varies in, for example, times of recession and rapidly increasing unemployment. The optimal timing of the deployment of additional Public Employment Service resources (e.g. the contracted service of JobPath) should take into account the economic cycle to ensure maximum benefit for public expenditure.

Long-term unemployment is damaging to people's confidence, skills, sectoral knowledge and soft skills. Moreover, there is a danger that long-term unemployment will lead to discouraged jobseekers moving from unemployment to inactivity. It is reasonable to infer that the increased employment activity attributable to receiving the JobPath service prevents a drift out of the labour force to inactivity by long-term unemployed people at a time when increasing the size of the labour force through increased participation is a strategic priority.

People who are long-term unemployed represent a particularly challenging cohort for any Public Employment Service. The success of the JobPath model in improving the employment prospects of such a cohort can provide an indication of a possible service provision model for other cohorts who are distant from the labour market and who represent a particular challenge.

Further analysis

This initial working paper represents a robust estimate of the impact of JobPath. In Cooperation with the OECD, it is intended to enhance this initial analysis in a number of directions over 2019-2010:

1. Additional measures of employment:
    - 2018 earnings data (full return available later in 2019)
    - 2019 real-time information on earnings from employment
2. Probabilistic assignment of earnings and employment periods to specific weeks

    A further enhancement of this approach is to develop more sophisticated measures of employment status, updated on the basis of a Bayesian probability approach by updating missing status information according to the levels of reliability of the data. This will coincide with more timely data on employment.

3. Other effects of JobPath:

    While this analysis examines the labour market outcomes of those who have been referred to and started JobPath, it is important to analyse what happens to those who are referred to JobPath but never start (see Section III). This involves an examination of this cohort and their later statuses, including receipt of illness and disability payments and participation in education and training programmes. Similarly, this cohort will be examined in respect of employment earnings, social welfare income and various labour market statuses.

4. Satisfaction ratings and outcomes:

    Since 2016, the Department has carried out customer satisfaction surveys of Intreo and JobPath customers twice a year. These provide an insight into jobseekers' satisfaction levels with the JobPath offices, staff, services, and processes, as well as jobseekers' views of JobPath compared to Intreo. Analysing this qualitative material in combination with the quantitative analysis presented here will point towards the channels through which JobPath improves labour market outcomes.

5. Other Steps:
    - Furthermore, it is important to understand if the programme outcomes improve with time or if the impact varies systemically with labour market conditions.
    - Additionally, in an effort to better understand the impact of JobPath, further analysis will explore how outcomes differ depending on the point during their unemployment spell at which people start JobPath.
    - Lastly, in order to understand if the impact of JobPath was evenly distributed based on regional provider, a further analysis will explore a comparison between JobPath providers and outcomes.

Conclusion

This report contributes to the debate about approaches to long-term unemployment in two respects:

- It provides a robust empirical estimate of the impact of the JobPath service, by measuring the change in earnings from employment and the change in labour market status between those who participated in Q1 2016 and those who did not but were, in all relevant respects, identical; and

- It clusters jobseekers into identifiable groups so that the PES can better identify jobseekers at risk of drifting into long-term unemployment. This can be further enhanced by developing estimated trajectories and using it as a means of identifying what course of action might be useful to tailor an approach that leads from unemployment to employment.

The Public Employment Service (PES) performs an important role in providing the support needed to people who lose their job and to help them return to employment in as short a time as possible. Performing this task well helps to minimise the drift to long-term unemployment. This, in turn, minimises the scale of the challenge faced by the PES in addressing the complex challenges of the long-term unemployment. JobPath makes an important contribution to this task.

In Ireland and elsewhere it is well established that those who become long-term unemployed (defined as being out of work for over twelve months) face diminishing prospects of securing employment. The longer a person is unemployed the less likely it is he or she will secure employment. For this reason, the quality of the service provided by the PES to this cohort is particularly important in helping to identify and address steps that they can take to secure stable employment and to support them in taking those steps. The evidence from research internationally indicates that case-work based employment counselling and job-search assistance has a positive impact in terms of improving employment outcomes for this group (Spermann, 2015). This is the service that JobPath is designed to deliver. If it is delivering the service well, the employment outcomes and earnings for people who receive the service should be noticeably better than the equivalent outcomes for those people who do not receive the service.

Based on the econometric analysis undertaken in this research it is clear that JobPath has been effective in supporting long-term unemployed people secure work and in improving employment earnings for those who do secure work. In summary the effect of JobPath is to

4. Increase **employment outcomes and annual earnings** from employment for those who participated in JobPath
5. Increase the **earnings per week** of employment
6. Decrease **reliance on social welfare income supports** in the period after participation on the programme

Each of these factors has a positive impact on the current situation of the individuals concerned, their expected labour market outcomes, the Exchequer finances and Each of these factors has a positive impact on the current situation of the individuals concerned, their expected labour market outcomes, the Exchequer finances and future entitlements to social insurance benefits. The effect on employment outcomes – the likelihood of a person getting a job – is very significant with **a 20%+** improvement in employment outcomes in 2017 and **26%+** in 2018. Of equal note is that the weekly employment earnings of people who secured employment with the support of JobPath are **16% higher** than the weekly employment earnings of people who secured employment without the support of JobPath in 2017 and **17% higher** in 2018. In total therefore the positive employment/earnings impact is **in the order of 35% in 2017 and 37% in 2018.**.The impacts were positive not only on an overall basis but for each of seven different clusters of Jobseekers with the positive employment earnings impact ranging **from 24%** for people with a prior history of being very long term unemployed **to 100%** for those people with prior history of intermittent employment.

Although evaluation methods and target groups differ between studies, compared to other employment schemes that have been the subject of econometric analysis this is

- Significantly better than the Back to Education Allowance Scheme (where the ESRI econometric evaluation indicated negative employment outcomes).
- Slightly ahead of the impact of the JobBridge programme - where the differential employment impact was estimated at c 14 percentage points (32% improvement)
- Somewhat lower than improvement previously reported (2017) for the Back to Work Enterprise Allowance Scheme (a scheme that supports people start their own business meaning that all participants, by definition, see an improvement in employment outcomes).

These findings indicate, firstly, that it is possible to achieve positive results for unemployed people with a payments-by-results contractual model; and secondly, that the State should continue to prioritise providing case-managed employment advisory services to long-term unemployed people.

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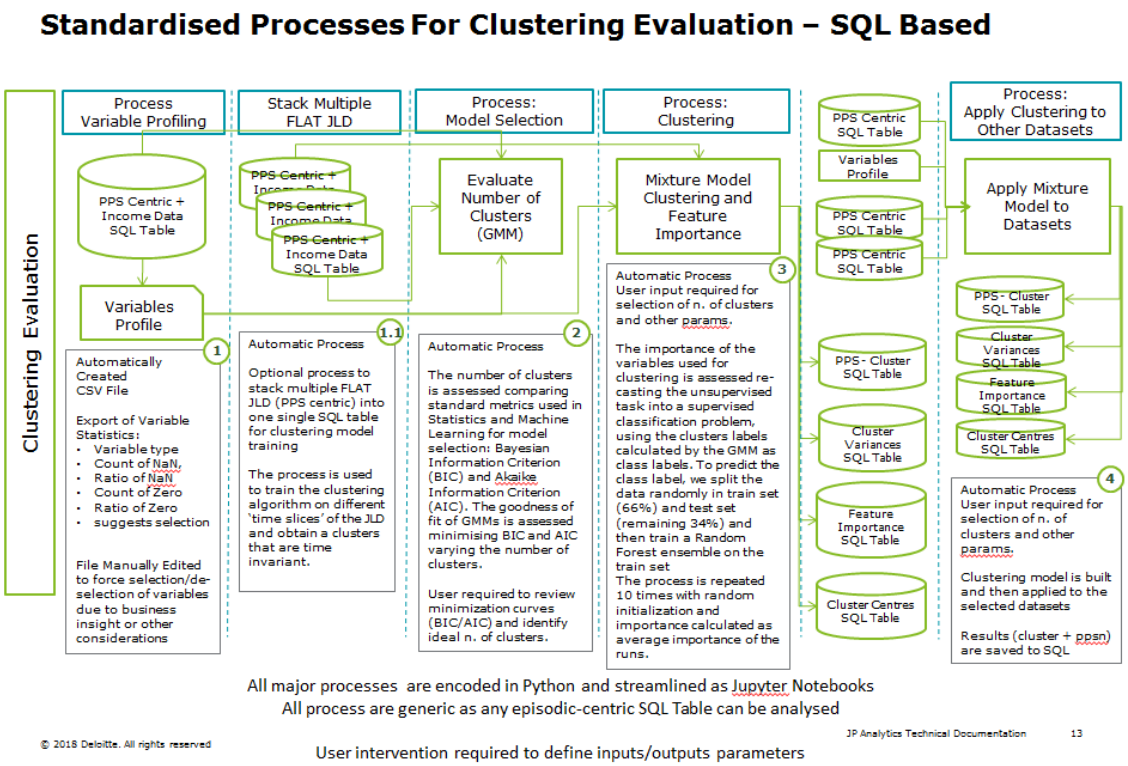
VIII Appendix

Standardised processes for data preparation – SQL based



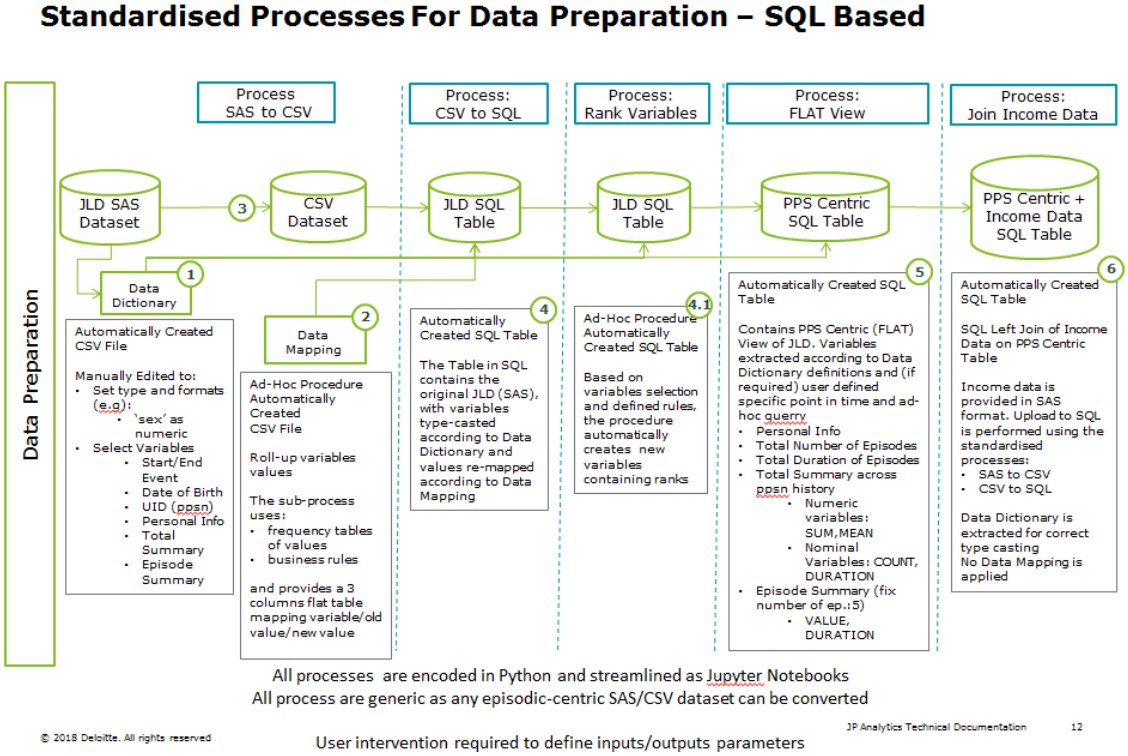


Figure 29: Standardized Processes for Data Preparation- SQL Based

JobPath Providers by Region and Location

Seetec

County	Locations	Number
Cavan	Cavan Town	1
Donegal	Buncrana, Dungloe, Letterkenny, Dunfanaghy, Killybegs, Donegal Town, Ballyshannon	7
Dublin	Amiens Street, Blanchardstown, Navan Road, Bishop Square, Balbriggan, Finglas, Ballymun, Dun Laoghaire, Clondalkin, Ballyfermot, Tallaght, Coolock, Swords	13
Galway	Galway City, Loughrea, Clifden, Tuam, Carraroe, Ballinasloe	6
Kildare	Maynooth	1
Leitrim	Carrick-on-Shannon, Manorhamilton	2
Longford	Longford	1
Louth	Dundalk, Drogheda	2
Mayo	Castlebar, Ballina, Belmullet	3
Meath	Navan, Kells, Trim	3
Monaghan	Monaghan Town, Carrickmacross	2
Offaly	Edenderry, Birr	2
Roscommon	Roscommon, Castlerea	2
Sligo	Sligo City, Tubbercurry	2
Westmeath	Athlone, Mullingar	2
	Total Seetec Locations:	**49**

Turas Nua

County	Locations	Number
Carlow	Carlow Town	1
Clare	Ennis, Kilrush	2
Cork	Cork City, Bandon, Clonakilty, Kinsale, Midleton, Bantry, Macroom, Skibbereen, Mallow, Fermoy	10
Kerry	Cahirciveen, Dingle, Kenmare, Killarney, Tralee, Listowel	6
Kildare	Athy, Naas	2
Kilkenny	Thomastown, Kilkenny City	2
Laois	Portlaoise	1
Limerick	Limerick City, Newcastlewest	2
Offaly	Tullamore	1
Tipperary	Thurles, Roscrea, Clonmel, Nenagh, Tipperary Town	5
Waterford	Waterford City, Dungarvan	2
Wexford	Wexford Town, Gorey, New Ross, Enniscorthy	4
Wicklow	Bray, Wicklow, Arklow	3
	Total Turas Nua Locations:	**41**

Table 33: JobPath Providers by Location

JobPath rollout dates by quarter and DSP claim office

Quarterly Go- Live Date	DSP Claim Office	DSP office Type	Division
2015 Q3	Bray	Intreo Centre	Mid Leinster
	Longford	Intreo Centre	Midlands North
	Cork Abbey Court	Intreo Centre	Cork Central
	Cork Hanover Street	Intreo Centre	Cork Central
	Galway	Intreo Centre	West
	Carlow	Intreo Centre	Mid Leinster
	Newbridge	Intreo Centre	Mid Leinster
	Waterford	Intreo Centre	South East
	Mullingar	SWLO	Midlands North
	Cavan	Intreo Centre	North East
2015 Q4	Dundalk	Intreo Centre	North East
	Ennis	Intreo Centre	Mid West
	Kilkenny	Intreo Centre	Midlands South
	Wexford	Intreo Centre	South East
	Carrigaline	Intreo Centre	Cork Central
	Castlebar	Intreo Centre	West
	Cobh	Intreo Centre	Cork Central
	Clonmel	Intreo Centre	Midlands South
	Limerick	Intreo Centre	Mid West
	Westport	Intreo Centre	West
	Ballina	Intreo Centre	West
	Navan	SWLO	Midlands North
	Thurles	SWLO	Midlands South
	Arklow	Intreo Centre	Mid Leinster
	Tullamore	Intreo Centre	Midlands South
	Achill	Intreo Centre	West
	Belmullet	Intreo Centre	West
	Letterkenny	SWLO	North West
	Buncrana	Intreo Centre	North West
	Clifden	Intreo Centre	West
	Dungloe	Intreo Centre	North West
	Loughrea	Intreo Centre	West
	Listowel	Intreo Centre	South West
	Bishop Square	Intreo Centre	Dublin Central
	Cahirciveen	Intreo Centre	South West
	Drogheda	Intreo Centre	North East
	Finglas	Intreo Centre	Dublin North
	Newcastlewest	Intreo Centre	Mid West
	Swords	Intreo Centre	Dublin North
	Tallaght	Intreo Centre	Dublin South
	Tralee	Intreo Centre	South West
2016 Q1	Cork St	Intreo Centre	Dublin Central
	Sligo	Intreo Centre	North West

	Blanchardstown	Intreo Centre	Dublin Central
	Coolock	Intreo Centre	Dublin North
	Athlone	Intreo Centre	Midlands North
	Carrick-on-Shannon	Intreo Centre	North West
	Birr	Branch	Midlands North
	Monaghan	Branch	North East
	Manorhamilton	Intreo Centre	North West
	Enniscorthy	Branch	South East
	Gorey	Branch	South East
	Dunfanaghy	Intreo Centre	North West
	Carrickmacross	Branch	North East
2016 Q2	Cahir	Branch	Midlands South
	Cashel	Branch	Midlands South
	Ck-on-Suir	Branch	South East
	Ennistymon	Branch	Mid West
	New Ross	Branch	South East
	Portarlington	Branch	Midlands South
	Portlaoise	Branch	Midlands South
	Rathdowney	Branch	Midlands South
	Tipperary	Branch	Midlands South
	Tulla	Branch	Mid West
	Navan Road	Intreo Centre	Dublin Central
	Baltinglass	Branch	Mid Leinster
	Midleton	Branch	Cork Central
	Youghal	Branch	Cork Central
	Kenmare	Intreo Centre	South West
	Killarney	Intreo Centre	South West
	Athy	Branch	Mid Leinster
	Muine Bheag	Branch	Mid Leinster
	Tullow	Branch	Mid Leinster
	Dungarvan	Branch	South East
	Kilmallock	Branch	Mid West
	Kilrush	Branch	Mid West
	Nenagh	Branch	Midlands South
	Roscrea	Branch	Midlands South
	Thomastown	Branch	Midlands South
	Wicklow	Branch	Mid Leinster
	Parnell	Intreo Centre	Dublin Central
	Tubbercurry	Branch	North West
	Mallow	Branch	South West
	Bantry	Branch	South West
	Fermoy	Branch	South West
	Macroom	Branch	South West
	Newmarket	Branch	South West
	Skibbereen	Branch	South West

Dingle	Branch	South West
Ardee	Branch	North East
Gort	Branch	Mid West
Killorglin	Branch	South West
Castleblaney	Branch	North East
Bandon	Branch	Cork Central
Clonakilty	Branch	Cork Central
Kinsale	Branch	Cork Central
Ballinrobe	Branch	West
Claremorris	Branch	West
Edenderry	Intreo Centre	Midlands North
Castlepollard	Branch	Midlands North
Swinford	Branch	West
Castletownbere	Branch	South West
Balllyshannon	Branch	North West
Kells	Branch	Midlands North
Boyle	Branch	Midlands North
Roscommon	Branch	Midlands North
Maynooth	Branch	Dublin South
Ballinasloe	Branch	Midlands North
Tuam	Branch	West
Trim	Branch	Midlands North
Ballyfermot	Intreo Centre	Dublin South
Killybegs	Branch	North West
Clondalkin	Intreo Centre	Dublin South
Ballyconnell	Branch	North East
Balbriggan	Intreo Centre	Dublin North
Nutgrove	Intreo Centre	Dublin Central
Dun Laoghaire	Intreo Centre	Dublin South
Kilbarrack	Intreo Centre	Dublin North
Donegal	Branch	North West
Ballybofey	Branch	North West
Castlerea	Branch	Midlands North
Ballymun	Intreo Centre	Dublin North

Table 34: JobPath rollout dates by quarter and DSP claim office

2017 time lag between JobPath referral and start date

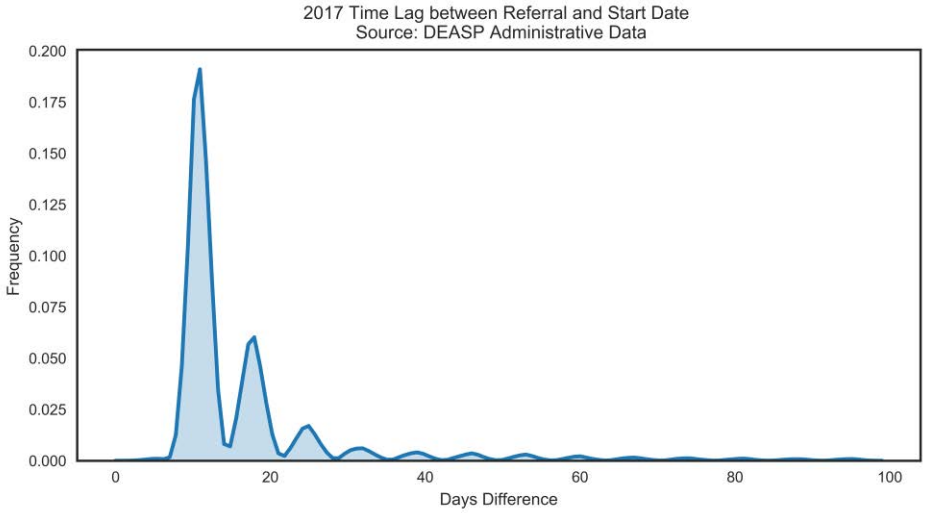


Figure 30: 2017 time lag between JobPath referral and start date

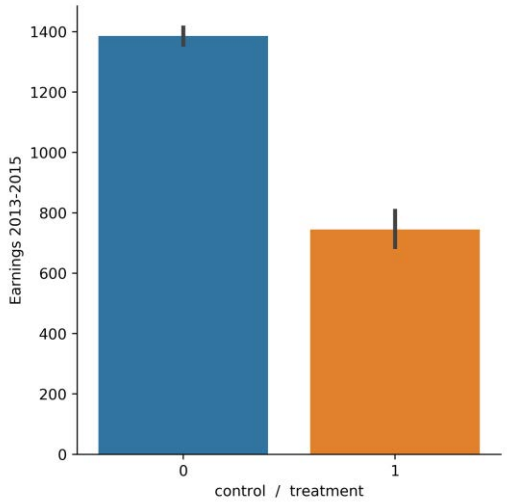


Figure 31: Earnings 2013-2015, unweighted, treatment and control

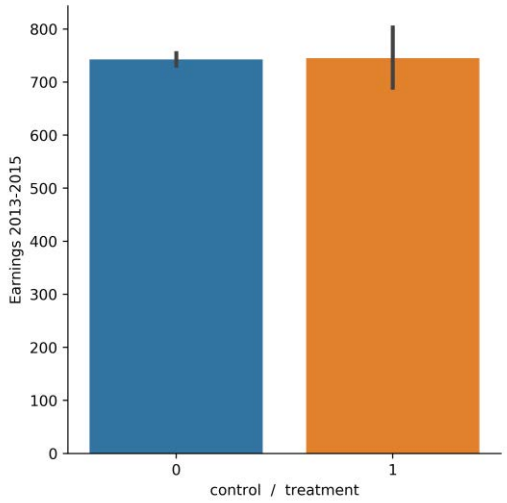


Figure 32: Earnings 2013-2015, weighted – treatment and control

Clusters of jobseekers on the Live Register

In order to understand the stability of clusters, this section gives an overview of the movements of individuals who remain in the same cluster over time, those who move to another cluster, or those who leave the cluster population. The persistence rate represents the rate that individuals remain in each cluster during a period of time. Whereas, the exit rate represents the number of individuals from each cluster that leave the total cluster population because they have gone off the Live Register during a certain period of time in which clusters are being compared. However, while these individuals leave the cluster population during one period, they may reappear later if they are back on the Live Register. The rates below are taken from an average of cluster stability measurements during various quarters from Q1 2015 to Q4 2016. Overall, the majority of cluster populations remain stable within the same cluster or exit the cluster population entirely. A small share of the population changes from one cluster to another during the time periods.

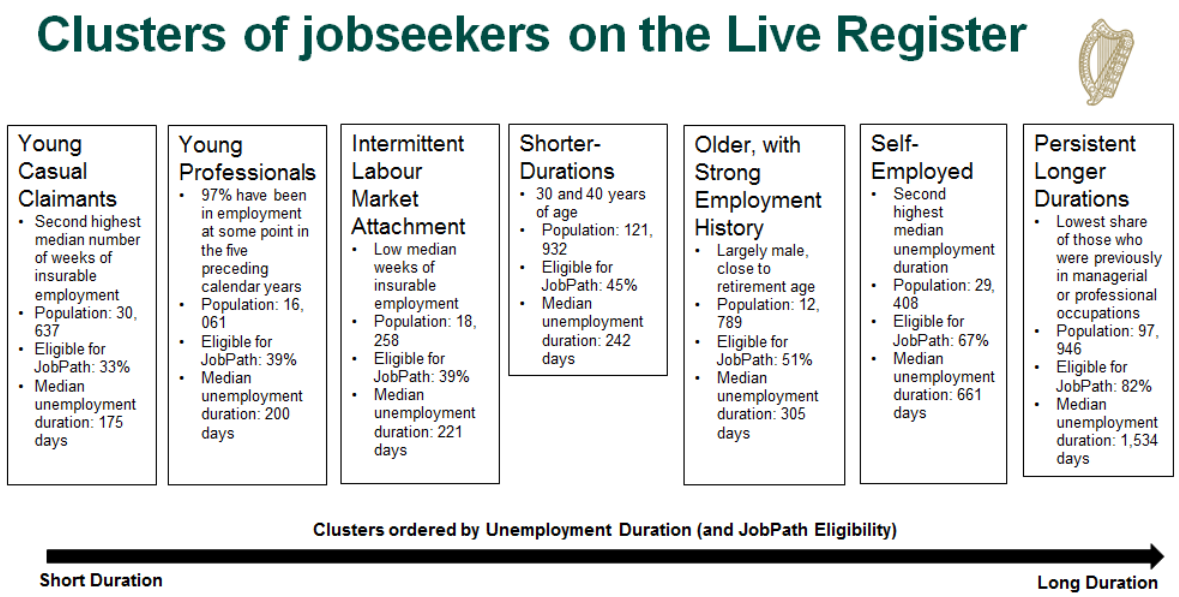


Figure 33: Clusters of Jobseekers on the Live Register

Cluster Stability

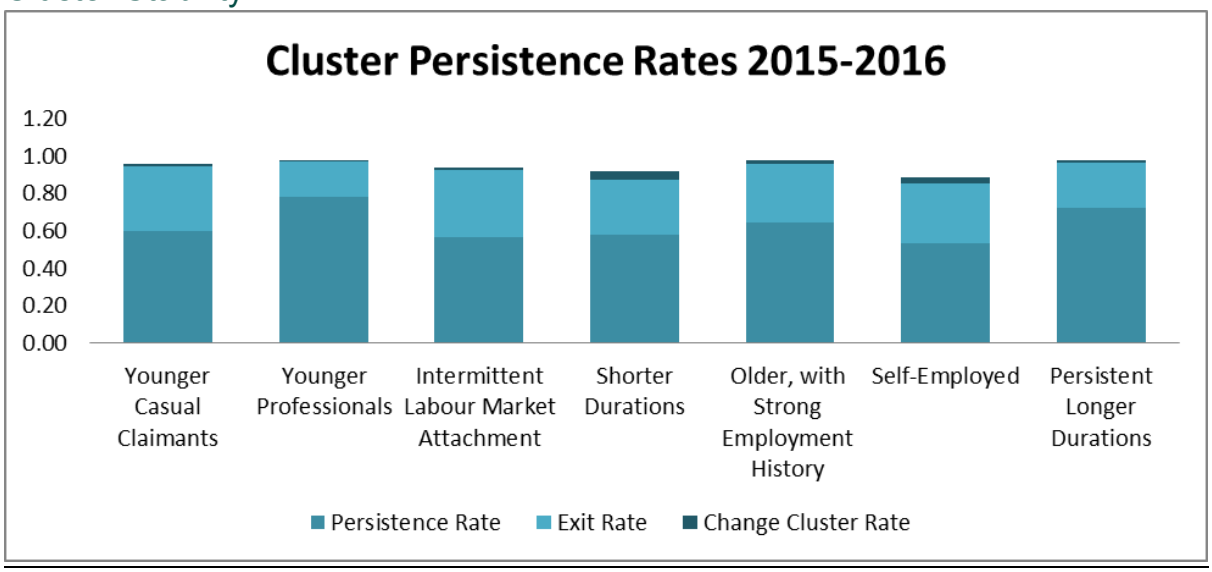


Figure 34: Cluster Persistence Rates

Younger Casual Claimants
This group has an average persistence rate of 60% and an average exit rate of 34%. From one quarter to the next, 76% of the cluster population remain in the cluster and 23% exit the total cluster population during this period.

Younger Professionals
This group has an average persistence rate of 78% and an average exit rate of 19%. From one quarter to the next one, 90% of individuals remain in this cluster and nearly 10% leave the total cluster population during this period.

Intermittent Labour Market Attachment
This group has an average persistence rate of 57% and an average exit rate of 35%. From one quarter to the next, 77% of cluster 4 remains in the cluster, whereas 22% of this cluster exits the total cluster population during this period.

Shorter Durations
On average, 58% of this cluster stays in that cluster from one period to another, 5% moves to another cluster, and 29% exit the total cluster population. From one quarter to the next one, 78% of individuals remain in this cluster, 5% move to another cluster, and 18% left the total cluster population during this period.

Older, With Strong Employment History
This group has an average persistence rate of 64% and an average exit rate of 31%. On average, 2% of this cluster moves to another cluster. From one quarter to the next, 80% of cluster 5 remains in the cluster, whereas 20% leave the total cluster population during this period.

Self Employed
On average, 53% of this cohort remains within the cluster, 3% move from this cluster to another, and 32% exit the total cluster population. From one quarter to the next, 75% of this cluster remains in the cluster, while 6% move to another cluster, and 20% leaves the total cluster population during this period.

Persistent Longer Durations

This group has an average persistence rate of 72% and an average exit rate of 24%. From one quarter to the next, 86% of this cluster population remains in the cluster, whereas 14% exit the total cluster population during this period.