Coates, Dermot; Lawless, Martina

Working Paper

Entrepreneur characteristics and determinants of self-employment across Europe

ESRI Working Paper, No. 772

Provided in Cooperation with:
The Economic and Social Research Institute (ESRI), Dublin

Suggested Citation: Coates, Dermot; Lawless, Martina (2024) : Entrepreneur characteristics and determinants of self-employment across Europe, ESRI Working Paper, No. 772, The Economic and Social Research Institute (ESRI), Dublin

This Version is available at:
https://hdl.handle.net/10419/296744

AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

ESRI Working Paper No. 772

February 2024

Entrepreneur characteristics and determinants of self-employment across Europe

Dermot Coates & Martina Lawless*

* Martina Lawless (corresponding author; martina.lawless@esri.ie), Economic and Social Research Institute and Trinity College Dublin.

Entrepreneur characteristics and determinants of self-employment across Europe[1]

Dermot Coates, Department of Enterprise, Trade and Employment

Martina Lawless, Economic and Social Research Institute

Final: January 2024

Abstract

Entrepreneurship is a key driver of jobs and innovation. This paper examines the prevalence of entrepreneurship across Europe and characteristics of those who become entrepreneurs. We place a particular focus on the distinction between opportunity and necessity motivations for becoming self-employed. The results in this paper find that one of the most significant barriers to entrepreneurship in Europe is lack of access to finance although this is noticeably lower in Ireland. Examining the characteristics of the self-employed, we find that participation by women and those in younger age cohorts (19-24 and 25-29) are significantly lower than for other groups. The results also suggest that considerations related to personal finances are amongst the main difficulties encountered in being self-employed.

[1] This research was undertaken as part of a joint research programme on *The Productivity Challenge and its Interaction with Climate, Digitalisation and Human Capital* between the Department of Enterprise, Trade and Employment and the Economic and Social Research Institute. The report is based on data from Eurostat European Labour Force Survey, reference year 2017, release 2020, version 1, DOI: 10.2907/LFS1983-2020V.1. The responsibility for all conclusions drawn from the data lies entirely with the authors and are not those of Eurostat, the European Commission or any of the national statistical authorities whose data have been used. We would like to thank the members of the steering committee for their valuable input on the research.
Corresponding author: Martina Lawless, Economic and Social Research Institute, Whitaker Square, Sir John Rogerson's Quay, Dublin 2, Ireland, D02 K138. Email: martina.lawless@esri.ie

1. Introduction

Governments promote entrepreneurship for a variety of reasons. Small and medium enterprises (SMEs) and entrepreneurs can be an important driver of economic growth by means of creating new jobs, stimulating innovation, and helping to diversify and strengthen local economies. The establishment and growth of new businesses are key ingredients for economic growth and job creation. In undertaking this study, the authors are interested in understanding the motivation of public policy in this space: in other words, are we endeavouring to promote entrepreneurship or self-employment and how do these concepts differ. Put differently, there is a difference between entrepreneurship with a focus on encouraging individuals to identify opportunities and innovate and the promotion of businesses with just one-employee but with no focus on innovation.

Understanding the determinants and barriers to entrepreneurship is therefore an important step in gaining insight on areas where policy may have a role to play in encouraging or facilitating entrepreneurial activity. It is important to understand the scope for any absence of entrepreneurship to impede economic and/or societal development. It also follows that there is a need to understand how best to shape public policy to encourage entrepreneurship. For instance, should policymakers focus solely on financial considerations or is there a need to take a broader perspective encompassing factors such as networking and/or the importance of a broader 'safety net' for aspirant entrepreneurs (i.e., social protection, pensions, healthcare, childcare, etc.).

A recent OECD review (2019) found that Ireland's SMEs and entrepreneurs operate in a broadly favourable business environment and that Ireland has a solid and comprehensive set of programmes targeted at SMEs and entrepreneurs. Although the report finds that '*in many areas of intervention, Ireland's policy approach could be considered as best practice internationally, such as in regulation, innovation, encouragement for high potential start-ups, and opening up public procurement to SMEs'*, the authors also reference the importance of addressing a number of factors such as lifting productivity growth in SMEs, increasing the start-up rate, spreading entrepreneurship across all segments of the population, and strengthening local entrepreneurship ecosystems.

The share of start-ups has been steadily decreasing and the same OECD research has noted that Ireland has a particularly low share of start-ups in the business economy and one of the lowest shares of employment in start-ups relative to other member countries. Low levels of business dynamism from both low entry and exit rates are of broader economic concern. Where sustained, these could act as a brake on overall productivity growth, particularly if the start-up rate in innovative sectors is low given that the *raison d'etre* of a typical start-up is to innovate by identifying unmet demand and potential opportunities not recognised by market incumbents.

The Government of Ireland has recently adopted a new White Paper on Enterprise (2022) which pledged to fuel entrepreneurship and enable companies to scale and succeed from Ireland. This states that SMEs and entrepreneurship are central to the objective of diversified, sustainable growth. In this context, it focuses primarily on high productivity entrepreneurship by making a commitment to *'increasing entrepreneurship activity and encouraging innovative start-ups, with an ambition to achieve a 20% increase in the number of High-Potential Start-Ups by 2024'.* As we shall discuss further

throughout the paper, there is an important distinction to be made between this type of entrepreneurial activity and more broadly measured self-employment activity.

It is important to be clear that the changing nature of the economy itself has exercised an important role in shaping the opportunities for – and nature of – both entrepreneurship and self-employment. For instance, the concept of non-typical working arrangements (say, casual workers) in the guise of the 'gig economy' is a relatively recent phenomenon and the correct classification of such workers – employed or self-employed – is an ongoing matter of debate as such issues gain greater prominence. Indeed, the incidence of such working arrangements is not homogenous across the economy. A recent the OECD/EU Policy Brief (2020) noted that the gig economy disproportionately impacts younger persons since they are more likely to be hired as self-employed workers rather than employees in order to avoid regulations, etc.

The migration of many sectors to an online presence over recent years means that the concept of platform work is now almost synonymous with the 'gig economy' more broadly. These changes have given rise to concerns regarding the incidence of 'bogus self-employment'[2]: '*people whose conditions of employment are similar to those of employees, who have no employees themselves, and who declare themselves (or are declared) as self-employed simply to reduce tax liabilities, or employers' responsibilities*' (Heyes and Hastings, 2017). This, in turn, has been reflected in debates throughout legal and enforcement circles given that these developments have highlighted a grey area between the standard binary divide of employment versus self-employment. In the case of Ireland, it would appear that gig, and platform, economy workers are typically classified as being self-employed. This notwithstanding, a recent Supreme Court ruling in Ireland[3] will likely have long-term implications in this regard. The Court noted '*changes in economic and social conditions, the evolving nature of working arrangements, and the increasingly complex legal regimes in which they operate…'* and went on to establish that delivery drivers for a given firm were, in fact, employees rather than contractors.[4]

This paper exploits a special module on self-employment included in all labour force surveys across the EU in 2017 to examine the characteristics of the self-employed across countries, as well as the determinants and obstacles to entrepreneurship. This harmonised dataset allows us to examine differences in the rates of entrepreneurship and to link these to individual characteristics. The key questions of interest relate to why the self-employed chose this status – examining the extent to which "pull" factors like opportunity and desire to be one's own boss compared to "push" factors such as the lack of other labour market options. Allied to this, we look at the reasons given by those in other employment statuses for how interested they are in becoming self-employed and the main reason they give for not switching. In this context, the role of financial constraints across individuals and countries is of particular interest as a potential barrier.

Taken together, these results give insight on areas where policy may have a role to play in encouraging or facilitating entrepreneurial activity. Before delving into the results of the analyses presented here,

[2] Study Practices of enforcement bodies detecting preventing bogus self employment.pdf (europa.eu)

[3] The Revenue Commissioners -V- Karshan Midlands Ltd T/A Dominos Pizza

[4] These legal developments are not reflected in the results presented below which is based on a dataset from 2017 (albeit that these will impact future policy developments).

it is instructive to introduce and explain a series of broad definitions. When considering those opting for entrepreneurship, it is important to note that people will have a variety of motivations underlying their decisions on work and these will contribute to understanding the difference between self-employment and entrepreneurship. For instance, some people make this choice in response to pull factors (say, opportunity) whilst others respond to push factors (say, an absence of choice). This points to the dichotomy between entrepreneurship based on opportunity versus necessity. The international literature suggests that those responding to opportunity are typically in-work when embarking on a new business venture whereas those responding to necessity are typically unemployed. Whereas the former cohort is likely to engage in activity that will spur innovation and productivity, the latter are more likely to be motivated by an absence of income.

The key findings presented below draw on this data to examine in detail variance by demographic characteristics for respondents in Ireland and to compare and contrast these responses with those of respondents in other countries across Europe. Finally, these results also shed some light on the extent of the phenomenon of "dependent" self-employment. Whereas the vast majority of self-employed individuals in both Ireland and across Europe have multiple clients, a small percentage of self-employed individuals in both all countries and Ireland do not have whilst there is also a notable cohort of self-employed individuals with only one client. These individuals are in dependent self-employment.

The remainder of the paper is structured as follows: Section 2 provides a concise summary of the international literature as it pertains to entrepreneurship whilst Section 3 describes the data. Sections 4 through 6 provide descriptive statistics, including demographic and economic characteristics; preferences, motivation, and obstacles; and job satisfaction and control, respectively. Section 7 combines the characteristics in an econometric framework and Section 8 provides a summary alongside an outline of the policy implications of the foregoing analyses.

2. Existing research on entrepreneurship

At the heart of entrepreneurship is the question as to why the self-employed chose this status; what is the balance between "pull" factors like opportunity and desire to be one's own boss compared to "push" factors such as the lack of other labour market options. When considering the role of "pull" versus "push" factors and entrepreneurship, Fairlie and Fossen (2018) note that business creation is typically strongest during economic downturns but that there is an underlying distinction arising from two broadly different types of entrepreneurship. To this end, they have posited that there are two components underpinning business creation: opportunity and necessity. This work found that opportunity entrepreneurship is generally pro-cyclical whilst necessity entrepreneurship is counter-cyclical. The authors adopt an operational definition whereby the former are those individuals not unemployed before starting a business whilst the latter are those who are initially unemployed.

Similarly, Amorós et al. (2019) have found that opportunity entrepreneurs tend to start a business in response to "pull" factors, such as personal and professional growth, personal aspirations, financial gain and/or innovation. By contrast, necessity entrepreneurs typically respond to "push" factors such

as the absence of other sources of employment and income. Interestingly, the underlying motivation driving entrepreneurial activity serves to shape the ultimate impact of this activity on the broader economy. The literature suggests that high rates of entrepreneurial activity are no guarantee of positive overall economic outcomes; indeed, the rate of new business creation has been found to have an inverse relationship with innovation (Shane, 2009; Anokhin and Wincent, 2012). The key factor then is that the underlying entrepreneurial activities can and do differ: entrepreneurship born of necessity is often linked to informal activities with limited impact whereas opportunity-based entrepreneurship is more likely to drive innovation, increase productivity and improve competitiveness. Policy objectives related to the promotion of new business creation are perhaps implicitly making this distinction although the ability to track the different types of entrepreneurship explicitly is challenging.

Another important factor is shaping decisions around self-employment is an understandable fear of failure (and the likely financial consequences thereof). Business failure impacts not just inexperienced start-ups but also extant corporations seeking to enter new markets and often this arises from a narrow focus on immediate decisions rather than learning from the experience of others. In the absence of a clear-sighted consideration of the experience of outside companies and industries, decision makers often fall foul of confirmation bias and simply find reasons to proceed (Horn, Lovallo, and Viguerie, 2005). In the case of innovative start-ups, factors such as awareness and experience can play a key role. The authors note that when a *'high level of inside industry knowledge is necessary to innovate; incumbents have a major advantage over new entrants. When outside knowledge is essential, entry is easier'*.

Whilst the foregoing factors are important to our understanding of the determinants of self-employment, it is important to note that self-employment rates do vary greatly across countries and the literature in this sphere outlines a negative relationship between per capita GDP and rates of self-employment. In other words, more advanced economies tend to exhibit a lower incidence of self-employment. Lucas (1978) attributed this to a decline in the return to entrepreneurship relative to wages as economic activity becomes more capital-intensive and scale becomes more important. Institutional variables also play an important role in determining the variability in observed self-employment rates internationally (Torrini, 2005), particularly tax rates and tax law enforcement. Specifically, the author found that opportunities for tax evasion have a strongly positive impact of self-employment rates whilst the size of the public sector was found to be negatively related to said rates. Similarly, Amorós et al. (2019) also find that the institutional capacity of the State – say, political stability, a clear regulatory framework and effective enforcement mechanisms – are important in shaping entrepreneurial incentives.

The importance of the broader business environment for promoting entrepreneurship is also emphasised by Kritikos (2014). Entrepreneurs can induce economic growth, particularly by means of challenging incumbent firms. This dynamic is particularly important during good economic times where the latter can become complacent and less willing to invest in R&D. Entrepreneurs increase competition, push established firms to improve their own performance and ultimately, foster productivity across the economy (even though any new business faces no guarantee of its own

survival). These gains, however, can only be achieved where the broader environment is receptive to innovation and provides the opportunity for entrepreneurs to operate flexibly and it has been posited that innovation and regulation are inversely related.

There is, however, a seeming grey zone for those that might be termed as '*dependent self-employed workers*' – in other words, those that might conceivably be considered to fall between our traditional understanding of paid employees and independent self-employed workers. This concept refers to those who are nominally self-employed workers but who are, in practice, economically dependent on (or subordinate to) those firms with which they are contracted. Recent developments in outsourcing and sub-contracting arrangements have played an important role in the transformation of employment relationships into business relationships with these arrangements increasing the scope for this dependency (Muehlberger, 2007; Román et al., 2011). Research has referenced the overlap between '*dependent self-employed workers*' and the growth of the gig economy phenomenon (Stewart and Stanford, 2017). Millán, Millán and Cacador-Rodrigues (2020) have referred to such cases as '*masked employees'* and found that those with these type of working arrangements tend to enjoy *'lower job control than self-employed workers, higher job demands than paid employees and, overall, worse job outcomes than both.*'

Finally, a variety of demographic characteristics – including age – are important determinants of opportunities for self-employment. A recent *Policy Brief* by the OECD and the European Union (2020) found that whereas many young people would prefer entrepreneurship over working as an employee, they are in practice much less likely than adults to be self-employed. The authors note a series of obstacles faced by youth entrepreneurs, including limitations which present disadvantages in terms of awareness, experience, skills, networks and access to finance (including sufficient credit history). This analysis demonstrates that despite the professed enthusiasm for self-employment, younger workers were almost half as likely as the general population to be self-employed (with Ireland and Germany recording the lowest rates of youth self-employment) but were more likely to start or manage a new business than their older counterparts.

The authors found that young entrepreneurs were more likely to operate in markets with low growth potential and were more likely to be innovative than entrepreneurs overall (i.e., introducing products and services that were new and unfamiliar to customers). They were, however, less likely to hire employees and less likely to report having entrepreneurship skills. The authors also found that due to their limited work experience, young entrepreneurs were likely to have only limited professional networks, to have little contact with successful entrepreneurial role models and to lack awareness around the availability of programmes to support new ventures.

3. Data on entrepreneurship in Europe

This paper is based on a stand-alone special module attached to the Labour Force Survey (LFS) across Europe in 2017. The LFS is a quarterly survey conducted by Eurostat and national statistical agencies in European Union (EU) and European Free Trade Association (EFTA) countries. The LFS is conducted

using a harmonized methodology across all participating countries, covering the entire population aged 15 and over. It collects data on a range of labour market indicators, including employment status, occupation, education, training and working hours along with data on demographic characteristics such as age, gender and nationality.

In addition to the standard survey, special modules examining specific issues are included in the survey on a regular basis. The special module on self-employment aimed to provide more detailed information on the characteristics of self-employed workers in the EU and EFTA countries. Specifically, it collected data on whether self-employed individuals worked alone or had employees, the motivation for self-employment, main obstacles faced and satisfaction with work. Employed individuals were asked if they were interested in becoming self-employed and, if so, what were the reasons preventing them from doing so. The overall sample is approximately half a million individuals and the coverage across countries is shown in Appendix Table A1.

The phrasing of the key questions in the special module that we will examine in the following sections were as follows:

Main reason for becoming self-employed when starting to work as self-employed in the current job:

1. Could not find a job as an employee
2. The respondent's former employer requested the respondent to become self-employed
3. It is the usual practice in the respondent's field
4. A suitable opportunity presented itself
5. Continued the family business
6. Did not want to or plan to become self-employed, but started working as self-employed for another reason than listed previously
7. Wanted to be self-employed because of flexible working hours
8. Wanted to be self-employed for another reason

Self-perceived main difficulty in working as self-employed during the last 12 months

1. Lack of influence on setting the price of own work
2. Lack of access to financing for the business
3. Delayed payments or non-payments
4. Inappropriate levels of administrative burden
5. Lack of income in case of sickness
6. Periods of financial hardship
7. Periods of having no customer, no assignments or project to work on
8. Other difficulty
9. Had no difficulties

Main reason for not becoming self-employed in the main job if self-employment is the preferred professional status

1. Financial insecurity
2. Difficulties with getting finance for the business
3. Too much stress, responsibilities or risk
4. Less coverage from social protection
5. Other reason

Self-perceived main reason for not having employees

1. Respondent primarily wants to employ him/herself
2. There is not enough work
3. Difficult to find suitable staff
4. Legal framework is too complicated
5. High social contributions
6. Not possible in the respondent's occupation
7. Respondent prefers to work with sub-contractors or associates
8. The respondent's client/s want(s) the respondent to do the work
9. Other reason

Level of job satisfaction in the main job

1. Satisfied to a large extent
2. Satisfied to some extent
3. Satisfied to a small extent
4. Not satisfied at all

Job autonomy: the level of influence over content and order of tasks in the main job

1. Able to influence both contents and order of tasks
2. Able to influence contents but not order of tasks
3. Able to influence order but not contents of tasks
4. Not able to order contents, nor order of tasks

Preference to work as an employee if currently self-employed or preference to work as self-employed if currently working as an employee

1. Does not want to change professional status
2. Is self-employed but wishes to work as an employee

3. Is working as an employee or family worker but wishes to be self-employed

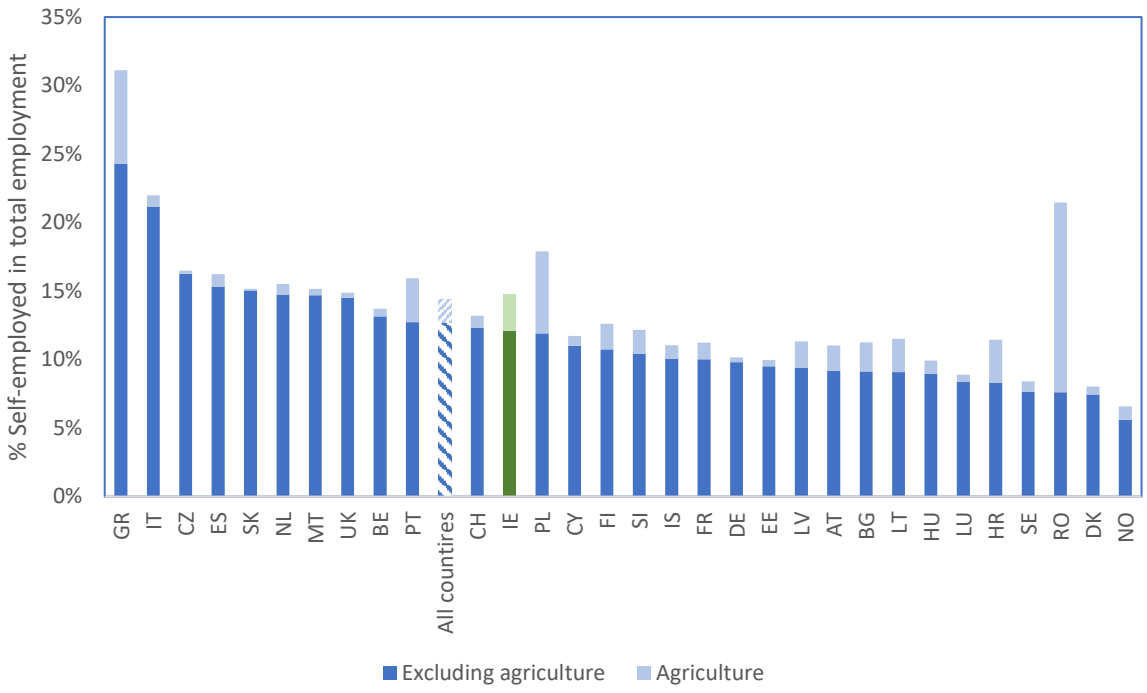
Economic dependency: number and importance of clients in the last 12 months

1. No client in the last 12 months
2. Only one client in the last 12 months
3. 2-9 clients in the last 12 months, but one was dominant
4. 2-9 clients in the last 12 months, and none was dominant
5. More than 9 clients in the last 12 months, but one was dominant
6. More than 9 clients in the last 12 months, and none was dominant

4 Variation in entrepreneurship by economic and demographic characteristics

We begin by examining the extent of self-employment across European countries. Figure 1 shows how the share of self-employment in total employment varies across countries. It presents both the data for all sectors and also the percentage of the workforce that is self-employed excluding agriculture. Given that the characteristics and motivations for self-employment in the agricultural sector, as well as the policy environment in that respect, may differ quite substantially from those in the broader economy, for the remainder of the paper we will focus on the non-agricultural sectors.

Figure 1: Self-employment rate by country (as percentage of total employed), 2017



Overall, we find that the total average self-employment rate across all countries and sectors is 14.4%, while the average excluding agriculture is 12.7%. Greece (31.1%) and Italy (22.0%) have the highest self-employment rates across all sectors, while Norway (6.6%) and Denmark (8.0%) have the lowest. Ireland is very similar to the overall average with a self-employment rate of 14.8% across all sectors and 12.1% excluding agriculture. The cross-country data used here gives us a snapshot of self-employment at a point in time. In work on a longer time series of LFS data for Ireland, Lawless, O'Brien and Rehill (2024) show that this rate of self-employment has been in decline over a number of years.

Table 1 shows the percentages of self-employment by age group (excluding agriculture) comparing Ireland to the pattern across all countries in the survey. To control for different age structures across countries, the table also shows the share of each age group in total employment (both wage employment and self-employment) and the share of self-employment accounted for by each age group.

Table 1: Self-employment rate by age group

	Self-employment rate		**Share of age group in total emp.**		**Share age group in all self-emp.**	
Age	All countries	Ireland	All countries	Ireland	All countries	Ireland
17-31	5.3%	2.1%	19.0%	21.7%	8.0%	3.8%
32-36	9.9%	8.2%	11.5%	13.1%	9.0%	8.9%
37-41	12.2%	9.7%	12.3%	15.0%	11.9%	12.0%
42-46	14.0%	14.5%	12.7%	13.2%	14.1%	15.7%
47-51	14.3%	15.7%	13.2%	11.5%	14.9%	14.9%
52-56	14.7%	18.3%	12.9%	10.2%	14.9%	15.5%
57-61	14.9%	17.1%	10.5%	8.1%	12.4%	11.5%
62-66	18.7%	22.8%	5.8%	5.3%	8.5%	10.0%
>66	40.4%	47.6%	2.0%	2.0%	6.3%	7.8%
Total	**12.7%**	**12.1%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Note: Age is reported in 5-year age bands in the LFS data. However, as the numbers reporting as self-employed were low in the youngest age cohorts, the 17-21, 22-26 and 27-31 age groups have been combined in this table.

Overall, the data shows that the self-employment rate tends to increase with age. The share of each age group in overall self-employment shows something of an inverted U-shape as labour force participation is lower in the older age cohorts. Therefore, although the older age groups are just as likely to be self-employed as groups aged 42-56, they make up a somewhat smaller share of the total stock of self-employed individuals. Overall, the data suggests that self-employment is a relatively less common option among the youngest age groups but becomes more common as individuals age and gain more experience in the workforce.

The most striking difference between Ireland and the other European countries is the low self-employment rate of the youngest age groups. For those aged 17-31, just 2.1% are self-employed in Ireland compared to 5.3% in the rest of Europe. The self-employment rates for Ireland are also somewhat lower than average for those in the 32-36 and 37-41 age groups. Ireland has one of the younger population structures in Europe, as shown by the higher shares accounted for by individuals in their 20s and 30s in total employment. The shares of these age groups in overall self-employment is therefore correspondingly lower than in other countries.

There are several reasons why self-employment is relatively lower among younger people. One is that some labour market experience is useful in developing skills and knowledge needed to successfully start and run a business. The identification of a market gap for opportunity self-employment may also be more likely to arise with familiarity in a particular area of work. It is not clear that this factor relating to labour market experience could explain the difference in Irish self-employment rates amongst the young compared to other countries. Strong wage employment opportunities may however be a factor that reduces the attractiveness of self-employment and would explain some of the variation across countries. Another reason for lower self-employment rates amongst younger age groups is the availability of finance. Starting a business can require a significant amount of capital and financial resources, which younger people may not have access to. The declining rate of home-ownership in younger cohorts in Ireland may play a role in this regard, as the household main residence could provide collateral if external finance was needed to establish a business.

At the other side of the age distribution, we note a sharp increase in the rate of self-employment after age 65. Although this has to be interpreted in the context of the relatively low labour market participation rate of this cohort, the over 65 group does account for a reasonably sizeable proportion of total self-employment (6.3% overall and 7.8% in Ireland). This pattern could be due to several factors, such as self-employed individuals being more likely to choose to continue working past retirement age than employees, some starting a new business venture after retirement and some continuing in an allied position to their previous wage employment but now working in a freelance or consulting capacity. A stable pension income may remove some of the financing risk of self-employment for some individuals. It is also possible that the self-employment rate is higher among older individuals due to a lack of traditional employment opportunities for this age group.

Table 2 shows self-employment rate by gender in Ireland and all countries. Again, to provide context to the rates of self-employment, we divide the data into the share of each gender in total active employment and the share of each gender in total self-employment. Across all countries, males have

a higher self-employment rate than females, with 15.8% of males self-employed in all countries compared to 9% for females. In Ireland, the male self-employment rate is rather higher than average at 17.1% while the rate for females is notably lower at 6.6%. There are also some differences in labour force participation with males accounting for the majority of total employment, at 53.4% in all countries and 52.2% in Ireland. However, when we look at the share of each gender in total self-employment, the gender gap is even wider. Males account for two-thirds of the self-employed across Europe and almost three-quarters in Ireland.

Table 2: Self-employment rate by gender

	Self-emp. rate by gender		**Share of gender in total emp**		**Share of gender in total self-emp.**	
	All countries	Ireland	All countries	Ireland	All countries	Ireland
Male	15.8%	17.1%	53.4%	52.2%	66.8%	73.9%
Female	9.0%	6.6%	46.6%	47.8%	33.2%	26.1%
Total	**12.7%**	**12.1%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

One set of explanations for the gender gap in self-employment is that women face more barriers than men when it comes to starting and running their own businesses. These barriers may include access to financing, networks, mentorship, and training, as well as societal expectations and gender norms. Another possible explanation is that women may be less likely to pursue self-employment due to family responsibilities or other factors that limit their ability to work long hours or take on the risks associated with entrepreneurship. Additionally, some occupations that are more commonly associated with self-employment, such as construction or technology, may be traditionally male-dominated, making it more challenging for women to enter these fields.

Table 3 shows the relationship between education level and self-employment. The pattern here is not particularly clear with individuals with low and high levels of education both being more likely to be in self-employment than those with a medium level of education. Both age profile and sector of work may be interacting with education to drive these patterns.

Table 3: Self-employment rate by broad education level

	Self-emp rate by edu.		Share of edu. group in emp.		Share edu. group in self-emp.	
	All countries	Ireland	All countries	Ireland	All countries	Ireland
High	14.2%	12.3%	35.8%	52.4%	40.0%	52.5%
Medium	11.3%	11.1%	47.7%	36.5%	42.5%	33.1%
Low	13.5%	15.8%	16.4%	11.1%	17.5%	14.3%
Total	**12.7%**	**12.2%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Table 4: Self-employment rate by sector

	Self-emp. by sector		Sector share in total emp		Sector share of self-emp.	
	All countries	Ireland	All countries	Ireland	All countries	Ireland
Acc. & food	15.2%	8.7%	5.0%	7.7%	6.1%	5.6%
Admin	12.6%	12.3%	4.5%	4.6%	4.4%	4.6%
Arts	24.9%	22.1%	1.8%	2.7%	3.6%	5.0%
Construction	26.7%	32.8%	7.1%	6.2%	15.0%	16.7%
Education	5.5%	4.7%	8.1%	7.6%	3.5%	3.0%
Finance	9.3%	5.1%	3.1%	4.7%	2.2%	2.0%
Health	8.8%	6.2%	11.6%	13.6%	8.0%	6.9%
ICT	14.5%	14.7%	3.3%	5.6%	3.8%	6.8%
Manufacturing	6.1%	8.0%	16.0%	12.1%	7.7%	7.9%
Other services	30.6%	26.9%	2.6%	2.5%	6.2%	5.7%
Prof services	30.2%	25.7%	6.0%	6.5%	14.2%	13.8%
Transport	10.6%	21.3%	5.4%	4.5%	4.5%	8.0%
Wholesale, retail	15.7%	9.7%	14.5%	14.5%	18.0%	11.7%
Total	**12.7%**	**12.1%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Electricity, gas, mining, water, household, public and extra-territorial services excluded due to small cell sizes.

There is considerable variation in self-employment rates across sectors, as shown in Table 4. Relative to the aggregate rate of 12.7% of workers being self-employed, rates in the construction and professional services sectors are closer to 30%. At the other end of the spectrum, self-employment is rarer in the manufacturing, finance and accommodation and food sectors. This may be indicative of a greater scale of operations being standard in these sectors, making self-employment (particularly solo self-employment) more difficult to establish. While the same broad patterns occur in Ireland as in the full sample of countries, some differences are worth noting particularly in regard to the higher self-employment rate in the construction sector.

Table 5 shows the distribution of self-employment across different occupations in Ireland and all countries, based on the 1-digit level of occupational classification from the International Labor Organisation: managers, professionals, technicians, clerical support, services and sales, craft workers, machine operators, and elementary work.[5] Looking at the self-employment rates of each occupational group, we find that managers are the most likely to be self-employed (27.1% in all countries and 30.9% in Ireland), followed by professionals and technicians. Those in elementary work occupations are the lease likely to be self-employed.

Table 5: Self-employment rate by occupation type

	Self-emp by occupation		**Occupation share in total active**		**Occupation in total self-emp.**	
	All countries	Ireland	All countries	Ireland	All countries	Ireland
Managers	27.1%	30.9%	6.3%	9.1%	13.4%	23.1%
Professionals	15.6%	14.1%	20.7%	25.2%	25.4%	29.2%
Technicians	10.2%	7.2%	16.7%	11.9%	13.5%	7.0%
Clerical support	2.9%	2.5%	10.0%	9.5%	2.3%	1.9%
Services & sales	13.7%	5.5%	17.5%	20.0%	18.8%	9.1%
Craft workers	19.3%	23.3%	11.9%	9.1%	18.1%	17.4%
Machine operators	7.7%	16.2%	7.3%	5.8%	4.4%	7.7%
Elementary work	4.2%	4.3%	8.6%	8.4%	2.9%	3.0%
All occupations	**12.7%**	**12.2%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

[5] The ILO classification also includes agricultural and military occupations which are not included in this analysis.

5 Descriptive evidence on preferences, motivations and obstacles

The previous section described the composition of self-employment across a number of individual characteristics. In this section, we examine the survey responses to some more qualitative questions to gauge the preferences on their work status of those who are both self-employed and employed, the key motivations behind choosing self-employment and the main obstacles faced in self-employment.

Table 6 provides information about the desire of individuals to change their employment status between employees and self-employed individuals. Looking at the data for all countries, we see that the percentage of employees who do not want to change their status is higher (90.4%) than that amongst self-employed individuals (84.2%). In Ireland, satisfaction with current work status is higher than the European average for both employees and the self-employed. We find that 93.5% of employees and 89.4% of self-employed do not what to change with their current work status.

Table 6: Preference about changing professional status, employed and self-employed

	All countries		Ireland	
	Employee	Self-emp	Employee	Self-emp
Does not want to change status	90.4%	84.2%	93.5%	89.4%
Self-employed but would prefer employment	-	15.8%	-	10.6%
Employed but would prefer self-employment	9.6%	-	6.5%	-
All preference groups	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Table 7 shows the reasons for self-employment. The most common reason for self-employment is that an opportunity arose, with 25.4% in all countries[6] and 40.6% in Ireland reporting this as their reason for becoming self-employed. Another common reason for self-employment, at 15.3% in all countries and 17.7% in Ireland, is that it is the usual practice in their field.

[6] Looking at the incidence of this response, there is a broad spread across individual countries (ranging from a low of c.10% to a high of c.50%).

Table 7: Main reason for being self-employed

	All countries	Ireland
No employee job	9.6%	5.9%
Former employer request	2.1%	2.2%
Usual practice in field	15.3%	17.7%
Opportunity arose	25.4%	40.6%
Continued family business	10.3%	6.9%
Other reason but not wanted	5.1%	2.7%
Wanted flexibility	12.4%	14.2%
Wanted for other reason	19.9%	9.9%
Total	**100.0%**	**100.0%**

This is in keeping with the variation across sectors and occupations noted previously with some areas of work having a higher likelihood of self-employment than others. A desire for flexibility is also a frequently cited reason for self-employment. All of these explanations relate to self-employment as an active preference. However, we also find evidence of necessity self-employment with a non-negligible percentage of respondents selecting "No employee job" as the key reason for their self-employed status (9.6% in all countries and 5.9% in Ireland).

To look into how these motivations vary across individual characteristics, it is useful to group them into two types of response related to the distinction between necessity and opportunity entrepreneurship widely used in this literature. We treat responses of “opportunity arose”, “wanted flexibility” and “wanted for other reason” as indicating opportunity entrepreneurship and the other responses as indicative of necessity in choosing this status. Table 8 shows that, by this grouping, the majority of self-employment is for reasons that could be considered opportunity-related. The opportunity share is notably higher in Ireland than in other European countries, reflecting the large response rate to the specific “opportunity arose” motivation. Across sectors, opportunity motivations dominate in almost all areas but are particularly prevalent in manufacturing, trade and professional services.

Interestingly, despite the relatively substantial differences in actual self-employment rates across age groups and gender, the responses to the motivations behind becoming self-employed are strikingly similar across the groups. Similar response shares are also found across the education groups. These patterns are perhaps suggestive of different rates of opportunity identification or exploitation across different groups. On the age pattern, this could be explained by a correlation between some labour market experience and identifying a gap in provision that could motivate a move into self-employment. The pattern across age is also interesting in the context of the attention given to the

emergence of the "gig" economy which might have led to the expectation of higher necessity self-employment amongst younger cohorts. The same explanation would not explain the variation in gender responses however and we can examine this further in looking at the responses to questions on obstacles to self-employment later in the section.

Table 8: Necessity and opportunity motivations for self-employment by broad characteristic

	All countries		Ireland	
	% Necessity	% Opportunity	% Necessity	% Opportunity
Total	42%	58%	35%	65%
By sector				
Manufacturing	43%	57%	32%	68%
Construction	45%	55%	39%	61%
Trade	44%	56%	30%	70%
Transport	45%	55%	40%	60%
Accommodation	42%	58%	30%	70%
ICT	31%	69%	32%	68%
Professional services	40%	60%	30%	70%
Health	47%	53%	53%	47%
Arts	51%	49%	50%	50%
Other sectors	39%	61%	29%	71%
By age group				
17-31	45%	55%	35%	65%
32-36	41%	59%	33%	67%
37-41	44%	56%	35%	65%
42-46	42%	58%	37%	63%
47-51	40%	60%	31%	69%
52-56	43%	57%	39%	61%
57-61	43%	57%	31%	69%
62-66	42%	58%	36%	64%
>66	40%	60%	40%	60%
By gender				
Male	42%	58%	36%	64%
Female	43%	57%	34%	66%
By education				
High education	42%	58%	37%	63%
Medium education	41%	59%	32%	68%
Low education	48%	52%	35%	65%

We next look at the main difficulties faced by self-employed individuals. Table 9 shows that the most common response was that there were no particular difficulties being encountered but that the majority indicated that they were faced with one of the potential difficulties. A caveat should be applied that the threshold for self-reporting of encountering difficulties may vary across countries. Not reporting any difficulties was somewhat more common in Ireland (34%) than in the overall sample (30%)[7]. Of the 70% encountering some difficulty across Europe, three issues dominate the responses: delays to being paid, administrative burden and periods without work. In Ireland, delayed payments are also identified as an issue of concern to a sizeable group of the self-employed. This can cause financial strain for self-employed individuals, who may have to cover expenses without immediate payment from clients.

Table 9: Main difficulty encountered in being self-employed

	All countries	**Ireland**
Cannot set own price	5.1%	2.1%
Lack of finance	3.0%	3.8%
Delayed payments	12.7%	16.1%
Admin burden	14.1%	6.9%
Lack of sickness income	7.9%	15.5%
Periods of financial hardship	7.7%	7.3%
Periods without work	13.1%	9.1%
Other difficulty	6.6%	5.0%
Had no difficulties	29.7%	34.3%
Total	**100.0%**	**100.0%**

The percentage of self-employed identifying administrative burden as a major challenge is twice as large in the overall sample compared to in Ireland (14% and 7% respectively). Periods without work are also less commonly reported as a challenge in Ireland. On the other hand, the lack of sickness income is reported as a problem by twice as many of the self-employed in Ireland compared to in the other countries (15.5% compared to 8%). This highlights the importance of social protection for self-

[7] This would be broadly in line with results of survey-based assessments of well-being where Irish respondents tend to report higher levels of satisfaction. For instance, the last round of the European Quality of Life Survey (2016) found that Irish respondents reported higher levels of satisfaction than EU respondents overall ('Taking all things together, how happy would you say you are?').

employed individuals, who do not have access to sick leave or other benefits that are commonly provided by employers.

As in the case of the motivations analysis above, examining how this range of potential factors vary across characteristics can be facilitated by grouping some related responses together. In this case we keep “no difficulties” as a single category and then group factors related to the financing and administration of the business into one category (i.e., Cannot set own price; Lack of finance; Delayed payments; Admin burden; and Other difficulty) and factors related to personal finances into the final category (Lack of sickness income; Periods of financial hardship; Periods without work). Table 10 shows that across the full sample, difficulties in financing and running the business account for 42% of issues facing the self-employed with financial insecurity the main problem for 29% and the remainder not facing any difficulties. In Ireland, there is a higher share of the self-employed reporting that they encountered no particular difficulties (34%), while those who did were slightly more likely to be concerned with personal financial circumstances than the European comparison.

Table 10: Main type of difficulty encountered in being self-employed by broad characteristics

	All countries			Ireland		
	No difficulty	Finance & other	Financial insecurity	No difficulty	Finance & other	Financial insecurity
Total	30%	42%	29%	34%	34%	32%
By sector						
Manufacturing	27%	48%	25%	30%	44%	26%
Construction	27%	42%	31%	23%	40%	37%
Trade	25%	44%	31%	37%	31%	32%
Transport	29%	39%	32%	31%	22%	47%
Accommodation	28%	42%	31%	44%	*	*
ICT	35%	41%	24%	33%	31%	36%
Professional services	31%	47%	23%	32%	48%	21%
Health	36%	43%	21%	44%	31%	25%
Arts	28%	31%	41%	*	*	38%
Other sectors	34%	34%	32%	41%	30%	29%
By age group						
17-31	33%	36%	31%	29%	35%	36%
32-36	27%	44%	29%	37%	27%	36%
37-41	28%	42%	30%	39%	30%	31%
42-46	27%	45%	29%	26%	40%	34%
47-51	27%	44%	30%	32%	39%	30%
52-56	28%	43%	29%	31%	35%	34%
57-61	29%	41%	30%	32%	37%	31%
62-66	34%	40%	26%	38%	30%	32%
>66	46%	32%	22%	54%	23%	23%
By gender						
Male	29%	44%	28%	31%	36%	33%
Female	32%	37%	31%	42%	29%	28%
By education						
High education	32%	43%	24%	36%	35%	29%
Medium education	29%	41%	30%	33%	35%	33%
Low education	25%	40%	36%	32%	28%	40%

* indicates suppressed due to low numbers of observations.

The main difference is evident in the share reporting difficulties with financing and administration of the business itself, which is ten percentage points lower for Ireland than the European responses. Across sectors, financial insecurity features less strongly as a difficulty amongst the self-employed in manufacturing, professional services and health. Difficulties arising from financing and administration are most prevalent in manufacturing, construction and also in profession services. Across age groups, financial insecurity is highest amongst the younger groups and those with lower levels of education.

Turning away briefly from the questions in the survey posed to those individual who are already self-employed to the factors that dissuade entry to self-employment, Table 11 shows the responses from current employees as to why they do not become self-employed. The most common response is concern about financial insecurity (40.5% in all countries and 50.2% in Ireland). Other key reasons are the difficulty financing a business (19.3% in all countries and 12.0% in Ireland), and the perception that self-employment involves too much stress or risk (10.4% in all countries and 13.6% in Ireland).

Table 11: Main reason for not being self-employed (for employees who would like to be self-employed)

	All countries	**Ireland**
Financial insecurity	40.5%	50.2%
Difficulty financing business	19.3%	12.0%
Too much stress or risk	10.4%	13.6%
Less social protection coverage	3.8%	2.8%
Other reason	26.0%	21.4%
Total	**100.0%**	**100.0%**

As above, we group these reasons into personal financial insecurity (including reduced social protection) and risks more directly related to the business (difficulty financing the business and stress or risk). Table 12 shows how these reasons vary across groups.

Table 12: Main type of obstacle to becoming self-employed by broad characteristic

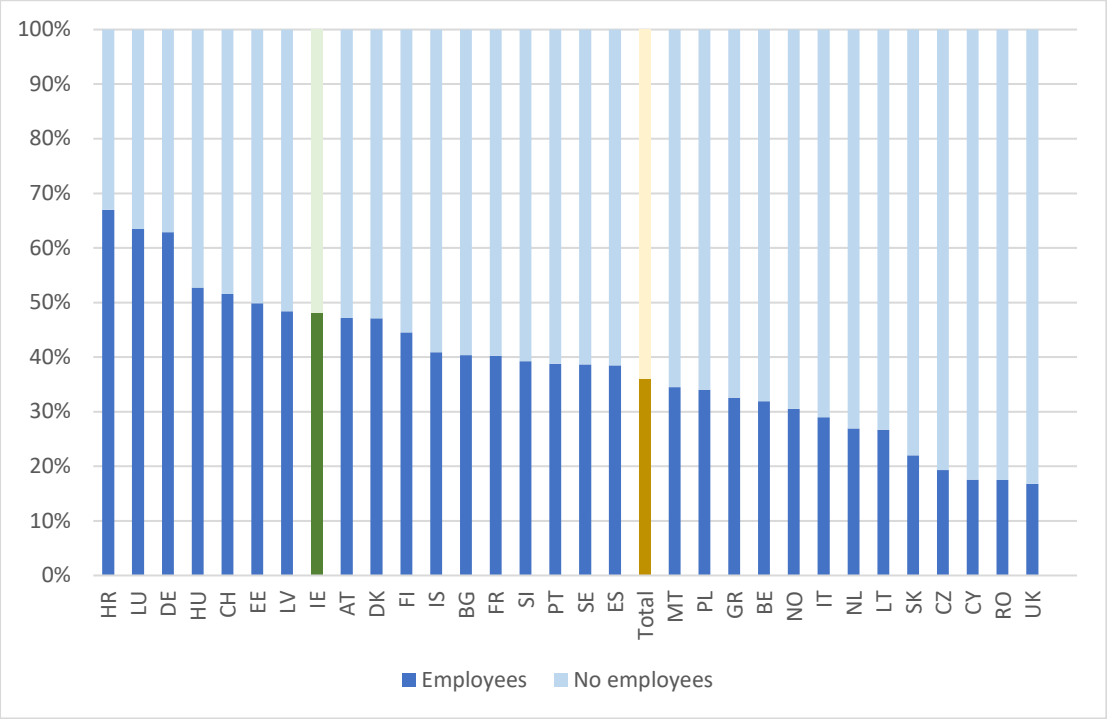
	All countries			**Ireland**		
	Financial insecurity	Difficulty financing business	Other reason	Financial insecurity	Difficulty financing business	Other reason
Total	44%	19%	36%	53%	12%	35%
17-31	36%	21%	43%	43%	14%	43%
32-51	48%	20%	32%	56%	12%	33%
52+	44%	15%	41%	58%	10%	32%
Male	44%	20%	36%	54%	12%	35%
Female	45%	18%	37%	52%	12%	36%
High educ.	44%	14%	42%	51%	12%	38%
Med. educ.	44%	22%	34%	57%	13%	30%
Low educ.	46%	24%	31%	54%	*	*

* indicates suppressed due to low numbers of observations.

We next look at the distinction between sole self-employed and those with employees, which has been suggested as one potential indicator of a difference between self-employment (creating a job) and entrepreneurship (creating jobs). Figure 2 shows the distribution of the two groups in each country. It shows that there is considerable variation in the share of self-employed individuals with and without employees across European countries. The highest percentages of self-employed individuals with employees are observed in Croatia (67%), followed by Luxembourg (63%) and Germany (63%). On the other hand, the highest percentage of self-employed individuals without employees is observed in the UK (83%), followed by Romania (83%) and Cyprus (82%).

Overall, the data suggests that self-employment is more common without employees than with employees in Europe, with an average of 64% of self-employed individuals not having employees[8]. Ireland has a higher share of its self-employed employing others compare to the European average with 48% of self-employed individuals having employees and the other 52% of self-employed individuals without employees.

Figure 2: Share of self-employed with and without employees



The two key reasons for not having any employees amongst the self-employed are not having enough work or a preference for working alone. As shown in Table 11, the share reporting that there is not

[8] It should be borne in mind that in some sectors (or occupations), it is traditional for a self-employed person to work as a sole practitioner

enough work to take on employees is higher in Ireland (44%) than the European average (31%) although this should be interpreted in the context of a lower share of the self-employed not having employees as shown in the previous figure. Other reasons for wanting to work alone as self-employed, such as legal complexity, high social contributions, and lack of suitable staff, are relatively uncommon. However, it is worth noting that paying a high social contribution is a more common reason in all countries, at 7.8%, compared to 1.9% in Ireland.

Table 13: Main reason for not employing others

	All countries	Ireland
Wants to work alone	29.1%	23.9%
Not enough work	31.0%	44.1%
Lack of suitable staff	2.8%	2.0%
Legal complexity	2.2%	1.9%
High social contributions	7.8%	1.9%
Not possible in occupation	10.4%	12.3%
Prefer work with sub-contractors	3.5%	2.7%
Client wants work by respondent only	5.9%	6.5%
Other reason	7.2%	4.7%
Total	**100.0%**	**100.0%**

6 Self-employment, job satisfaction and control

In this section, we compare job satisfaction and autonomy responses between the self-employed and employees. We also look at the issue of dependent self-employment, which was included in the survey as a question on the number of clients and if any were dominant customers to the self-employment business.

Table 12 compares self-reported job satisfaction rates among employees and self-employed, which indicates that overall the self-employed tend to report higher levels of job satisfaction than employees. This is particularly marked in Ireland, where 67.2% of self-employed individuals report being very satisfied with their job, compared to 54.3% of employees. Across all countries, a similar difference holds with 51.6% of self-employed individuals report being very satisfied, compared to 42.9% of employees[9]. The share of both groups reporting that they are very satisfied with work is higher in Ireland than in other countries. Only a small percentage of the survey respondents report being satisfied to a small extent, and an even smaller percentage report not being satisfied at all.

Self-employed workers report a significantly higher propensity to consider themselves to be 'very satisfied' in terms of their job satisfaction and employment when compared to the survey responses

[9] Self-employed persons will necessarily have more agency than employees and agency (including control) is a key contributor to happiness (Kotan, 2010).

for paid employees. The above findings are consistent with the international literature. For instance, self-employment has been found to be characterised by lower levels of – and more variability in – income when compared to those in paid employment. By contrast, however, the self-employed have been found to enjoy greater job satisfaction (or a non-economic utility) associated with the opportunity to be one's own boss (Hamilton, 2000; Millán et al., 2013).

Table 14: Job satisfaction of employees and self-employed

	All countries Employee	All countries Self-emp	Ireland Employee	Ireland Self-emp
Very satisfied	42.9%	51.6%	54.3%	67.2%
Satisfied to some extent	47.2%	40.8%	36.1%	27.6%
Satisfied to small extent	7.4%	5.5%	7.5%	3.5%
Not satisfied at all	2.5%	2.1%	2.1%	1.7%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Table 15: Degree of job autonomy for employees and self-employed

	All countries		Ireland	
	Employee	Self-emp	Employee	Self-emp
Influence content and order of tasks	41.1%	81.0%	46.5%	86.8%
Influence content but not order of tasks	5.1%	4.1%	3.3%	2.8%
Influence order but not content of tasks	16.6%	6.9%	15.5%	5.6%
No influence on tasks	37.2%	8.0%	34.8%	4.7%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**

While many factors can be behind job satisfaction, one particular area that was included as a potential source of satisfaction that could differ between employees and the self-employed is the degree of control or autonomy they have on their work. Table 13 compares the ranking of job autonomy responses for the two groups, which shows 81.0% of self-employed individuals reported having influence over the content and order of tasks, almost double the rate reported by employees (41.1%). At the other end of the response scale, over one-third of employees reported having no influence on tasks, whereas this was very uncommon amongst the self-employed.

Table 16: Self-employed range of clients and dependency

	All countries	Ireland
No client	2.7%	1.8%
Only 1 client	8.4%	7.7%
2-9 clients, 1 dominant	4.7%	5.3%
2-9 clients, none dominant	14.6%	15.9%
>9 clients, 1 dominant	3.7%	2.7%
>9 clients, none dominant	66.0%	66.7%
Total	**100.0%**	**100.0%**

Potentially linked to the responses on the level of autonomy experienced by the self-employed is the degree to which they are reliant on a single or dominant client. Table 14 shows the extent of this phenomenon of "dependent" self-employment when the survey was conducted in 2017. The vast majority of self-employed individuals in both have multiple clients, with 66% of self-employed individuals across Europe and also in Ireland having more than 9 clients and none of them regarded as dominant. However, it is worth noting that a small percentage of self-employed individuals in both all countries and Ireland did not have any clients at the time of the survey collection, at 2.7% and 1.8%, respectively. Additionally, 8.4% of self-employed individuals in all countries and 7.7% in Ireland have only one client. This indicates that while having a diverse client base may be advantageous, not all self-employed individuals have achieved this level of stability and may be more vulnerable to income fluctuations.

7 Econometric analysis

In this section, we examine to some extent the robustness of some of the key relationships described in previous sections when other characteristics are controlled for. A caveat to the following analysis is that causation cannot be formally established from cross-sectional data. However, we can identify some interesting relationships that may be informative for policy formulation and help to give directions for future research in this area.

We begin by looking at the characteristics of the self-employed relative to those in wage employment. We use a probit specification where the outcome variable is 0 for employed individuals and 1 for the self-employed. The regressions in Table 17 are run separately for Ireland and for the other countries in the sample to identify if any substantial differences emerge between the relationships of the different characteristics and the likelihood of being self-employed. We find that women are less likely to be self-employed even when a range of other characteristics are controlled for, which is consistent

with the descriptive evidence earlier. Also consistent with previous research, the likelihood of being self-employed increases gradually with age and education level.

Looking at occupational patterns, we find that managerial, professional, technical and craft workers are all more likely to be self-employed than those in other occupations in the Europe-wide data. For the Irish data, no statistical significance is found across occupations once the demographic and sector controls are included in the specification. It should be noted that this may be affected by the smaller sample size for the Irish regressions rather than conclusive evidence that there is no variation across occupations in self-employment likelihood in Ireland. Sectors with higher likelihoods of self-employment include arts, construction and professional services as indicated in the descriptive evidence.

Many of the same characteristics that influence self-employment status affect the likelihood of having employees while self-employed relative to those that are solo self-employed (Table 18). Women and those with lower education levels are more likely to be self-employed without any employees. Likewise, older self-employed individuals are less likely to be solo self-employed (i.e. more likely to have employees) in the overall European data although the age bands are not statistically significant in the separate Irish specification.

Table 17: Self-employed relative to employee

	Europe	Ireland		Europe	Ireland
Female	-0.035***	-0.031***	Manager	0.542***	0.169
	(0.001)	(0.004)		(0.153)	(0.156)
Aged 22-26	0.094***	-0.013	Professional	0.345**	0.058
	(0.011)	(0.026)		(0.136)	(0.092)
Aged 27-31	0.168***	0.023	Technician	0.270**	-0.002
	(0.012)	(0.035)		(0.135)	(0.064)
Aged 32-36	0.215***	0.136**	Clerical	0.063	-0.047
	(0.013)	(0.057)		(0.089)	(0.031)
Aged 37-41	0.250***	0.157***	Services & sales	0.312**	-0.009
	(0.013)	(0.059)		(0.135)	(0.061)
Aged 42-46	0.279***	0.226***	Craft work	0.384***	0.082
	(0.014)	(0.069)		(0.148)	(0.116)
Aged 47-51	0.294***	0.248***	Machinist	0.204	0.014
	(0.014)	(0.072)		(0.131)	(0.077)
Aged 52-56	0.309***	0.295***	Elementary	0.121	-0.042
	(0.014)	(0.078)		(0.108)	(0.033)
Aged 57-61	0.329***	0.292***	Household size	0.001***	0.000
	(0.014)	(0.080)		(0.000)	(0.001)
Aged 62-66	0.400***	0.381***	Single	-0.003*	0.015*
	(0.016)	(0.088)		(0.002)	(0.009)
Aged over 66	0.624***	0.637***	Married	0.006***	0.019***
	(0.015)	(0.083)		(0.001)	(0.007)
Administration	-0.019***	0.039**	Low education	-0.001	-0.010*
	(0.002)	(0.017)		(0.001)	(0.006)
Arts	0.036***	0.094***	Medium education	-0.007***	-0.006
	(0.004)	(0.024)		(0.001)	(0.005)
Construction	0.025***	0.100***	Mining	-0.072***	-0.052***
	(0.003)	(0.019)		(0.002)	(0.008)
Education	-0.081***	-0.048***	Other services	0.125***	0.201***
	(0.001)	(0.005)		(0.005)	(0.031)
Electric, gas	-0.078***	-0.059***	Professional services	0.100***	0.059***
	(0.001)	(0.003)		(0.004)	(0.016)
Water	-0.077***	-	Public service	-0.104***	-0.066***
	(0.001)			(0.001)	(0.003)
Finance	-0.034***	-0.040***	Real estate	0.058***	0.101**
	(0.002)	(0.006)		(0.006)	(0.041)
Health	-0.053***	-0.037***	Transport	-0.021***	0.062***
	(0.001)	(0.006)		(0.002)	(0.018)
Household services	-0.034***	0.184***	Water	-0.073***	-0.050***
	(0.003)	(0.068)		(0.001)	(0.008)
ICT	-0.026***	-0.004	Wholesale, retail	0.003*	-0.006
	(0.002)	(0.010)		(0.002)	(0.008)
Manufacturing	-0.074***	-0.035***			
	(0.001)	(0.006)			
Observations				407,293	16,115

Probit marginal effects. Standard errors in parentheses

**** p<0.01, ** p<0.05, * p<0.1*

Base categories: Male, aged 17-22, divorced, high education, accommodation & food sector, military occupation

Table 18: No employees relative to self-employed with employees

	Europe	Ireland		Europe	Ireland
Female	0.091***	0.100***	Manager	-0.921***	0.840***
	(0.005)	(0.032)		(0.002)	(0.040)
Aged 22-26	-0.016	-0.206	Professional	-0.962***	0.908***
	(0.073)	(0.279)		(0.001)	(0.031)
Aged 27-31	-0.136*	0.064	Technician	-0.881***	0.625***
	(0.077)	(0.270)		(0.002)	(0.022)
Aged 32-36	-0.183**	0.179	Clerical	-0.728***	0.508***
	(0.077)	(0.241)		(0.002)	(0.013)
Aged 37-41	-0.203***	0.129	Services & sales	-0.958***	0.659***
	(0.077)	(0.255)		(0.002)	(0.027)
Aged 42-46	-0.203***	0.135	Craft work	-0.935***	0.871***
	(0.076)	(0.255)		(0.002)	(0.031)
Aged 47-51	-0.214***	0.084	Machinist	-0.765***	0.668***
	(0.076)	(0.262)		(0.002)	(0.024)
Aged 52-56	-0.213***	0.141	Elementary	-0.737***	0.535***
	(0.076)	(0.255)		(0.002)	(0.015)
Aged 57-61	-0.205***	0.171	Household size	-0.002***	-0.015
	(0.077)	(0.246)		(0.001)	(0.011)
Aged 62-66	-0.200***	0.167	Single	0.029***	0.093*
	(0.077)	(0.247)		(0.008)	(0.056)
Aged over 66	-0.177**	0.155	Married	-0.036***	-0.040
	(0.078)	(0.250)		(0.007)	(0.052)
Administration	0.138***	0.177**	Low education	0.080***	-0.031
	(0.011)	(0.081)		(0.007)	(0.043)
Arts	0.242***	0.272***	Medium education	0.043***	-0.009
	(0.007)	(0.061)		(0.006)	(0.033)
Construction	0.109***	0.078	Mining	0.065	
	(0.009)	(0.069)		(0.058)	
Education	0.215***	0.226***	Other services	0.150***	0.192***
	(0.009)	(0.071)		(0.009)	(0.068)
Electric, gas	0.211***	0.090	Professional services	0.205***	0.178***
	(0.031)	(0.412)		(0.008)	(0.063)
Finance	0.136***	0.148	Public service	0.248***	0.318**
	(0.012)	(0.092)		(0.021)	(0.131)
Health	0.142***	0.124*	Real estate	0.164***	0.116
	(0.010)	(0.073)		(0.013)	(0.109)
Household services	0.276***	0.295***	Transport	0.086***	0.089
	(0.013)	(0.113)		(0.014)	(0.091)
ICT	0.232***	0.313***	Water	0.060	
	(0.008)	(0.054)		(0.043)	
Manufacturing	0.006	0.098	Wholesale, retail	0.085***	0.030
	(0.011)	(0.069)		(0.008)	(0.067)
Observations	57,700	1,944			

Probit marginal effects. Standard errors in parentheses

**** p<0.01, ** p<0.05, * p<0.1*

Base categories: Male, aged 17-22, divorced, high education, accommodation & food sector, military occupation

In Table 19, we examine the correlates of identifying as being self-employed because of opportunity compared to being self-employed for reasons of necessity (as defined above). One interesting finding is that the coefficient on being female is positive in Ireland indicating that they are more likely to be self-employed for opportunity motives. This is in contrast to the finding for the overall country sample, where women are less likely than men to be in opportunity self-employment once other characteristics are controlled for. Opportunity self-employment is higher for the 22-26 age group in Ireland relative to necessity motives, but age has no statistical significance in any other grouping.

The econometric specification examining if employees who would like to be self-employed differ systematically from those who wish to remain employees is shown in Table 20. These show that women are less likely to wish to become self-employed than men. Interest in being self-employed is higher for those with more education. Both of these patterns are similar to the findings relating to the comparison of characteristics of self-employed overall compared to employees. Across age groups there is a statistically significant pattern of prime-age workers being more interested in self-employment that those in the youngest (reference) category or those aged over 50. There is some variation across sectors and occupations but this is more difficult to compare to the other results as these relate to the current employment status of the respondent and not necessarily the sector or occupation in which they would like to be self-employed if they were to change work status.

Finally, when we look at the obstacles to becoming self-employed, across most characteristics we find that concerns on financing the business or other reasons are systematically of less concern that the comparison category which is concern about personal financial security. This result in Table 21 comes from a multinomial logit specification to jointly estimate the three broad reasons for not being self-employed despite wishing to. The results are presented for the full European sample only as the number of observations in the Irish sample was too low for robust estimation.

Table 19: Opportunity v Necessity (baseline grouping)

	Europe	Ireland		Europe	Ireland
Female	-0.024***	0.058*	Manager	-0.808***	0.853***
	(0.005)	(0.032)		(0.003)	(0.044)
Aged 22-26	-0.018	0.312***	Professional	-0.917***	0.890***
	(0.053)	(0.092)		(0.002)	(0.043)
Aged 27-31	0.003	0.240	Technician	-0.790***	0.524***
	(0.052)	(0.167)		(0.003)	(0.027)
Aged 32-36	0.033	0.280*	Clerical	-0.602***	0.399***
	(0.051)	(0.159)		(0.002)	(0.014)
Aged 37-41	0.024	0.257	Services & sales	-0.908***	0.574***
	(0.051)	(0.190)		(0.002)	(0.033)
Aged 42-46	0.029	0.241	Craft work	-0.881***	0.826***
	(0.051)	(0.212)		(0.003)	(0.047)
Aged 47-51	0.040	0.289	Machinist	-0.652***	0.546***
	(0.050)	(0.180)		(0.002)	(0.030)
Aged 52-56	0.025	0.246	Elementary	-0.621***	0.408***
	(0.051)	(0.209)		(0.002)	(0.015)
Aged 57-61	0.018	0.269	Household size	0.000	0.008
	(0.051)	(0.179)		(0.001)	(0.011)
Aged 62-66	0.024	0.243	Single	-0.020**	-0.065
	(0.051)	(0.197)		(0.009)	(0.060)
Aged over 66	0.028	0.240	Married	0.007	0.005
	(0.051)	(0.191)		(0.007)	(0.054)
Administration	0.048***	0.036	Low education	-0.036***	0.058
	(0.015)	(0.096)		(0.008)	(0.041)
Arts	-0.078***	-0.048	Medium education	0.003	0.056*
	(0.016)	(0.087)		(0.006)	(0.033)
Construction	-0.030***	-0.015	Mining	-0.250***	
	(0.012)	(0.072)		(0.063)	
Education	0.009	0.142*	Other services	0.045***	0.007
	(0.016)	(0.073)		(0.012)	(0.079)
Electric, gas	0.024	-0.093	Professional services	0.021*	0.132**
	(0.058)	(0.350)		(0.012)	(0.062)
Water	0.273**		Public service	-0.050	0.226*
	(0.111)			(0.048)	(0.127)
Finance	-0.013	0.176**	Real estate	-0.001	0.109
	(0.017)	(0.084)		(0.020)	(0.111)
Health	-0.056***	-0.073	Transport	0.011	-0.042
	(0.013)	(0.083)		(0.017)	(0.094)
Household services	-0.200***	0.009	Water	-0.003	
	(0.028)	(0.199)		(0.048)	
ICT	0.091***	0.139**	Wholesale, retail	-0.004	0.026
	(0.015)	(0.065)		(0.009)	(0.067)
Manufacturing	-0.023*	0.033			
	(0.012)	(0.070)			
Observations	56,574	1,596			

Probit marginal effects. Standard errors in parentheses

**** p<0.01, ** p<0.05, * p<0.1*

Base categories: Male, aged 17-22, divorced, high education, accommodation & food sector, military occupation

Table 20: Employee who would like to be self-employed

	Europe	Ireland		Europe	Ireland
Female	-0.031***	-0.037***	Manager	0.052***	0.002
	(0.001)	(0.005)		(0.009)	(0.036)
Aged 22-26	0.027***	0.059*	Professional	0.026***	-0.004
	(0.005)	(0.035)		(0.007)	(0.034)
Aged 27-31	0.033***	0.072**	Technician	0.023***	0.004
	(0.005)	(0.036)		(0.007)	(0.036)
Aged 32-36	0.033***	0.080**	Clerical	0.016**	-0.007
	(0.005)	(0.036)		(0.007)	(0.033)
Aged 37-41	0.020***	0.055*	Services & sales	0.033***	-0.001
	(0.004)	(0.032)		(0.008)	(0.034)
Aged 42-46	0.010**	0.062*	Craft work	0.028***	0.020
	(0.004)	(0.034)		(0.008)	(0.043)
Aged 47-51	-0.001	0.065*	Machinist	0.025***	-0.006
	(0.004)	(0.035)		(0.008)	(0.034)
Aged 52-56	-0.012***	0.059*	Elementary	0.021***	-0.007
	(0.003)	(0.035)		(0.008)	(0.033)
Aged 57-61	-0.026***	0.042	Household size	-0.001***	-0.006***
	(0.003)	(0.032)		(0.000)	(0.002)
Aged 62-66	-0.036***	0.050	Single	-0.015***	-0.001
	(0.003)	(0.036)		(0.002)	(0.010)
Aged over 66	-0.043***	0.054	Married	-0.017***	0.005
	(0.003)	(0.045)		(0.002)	(0.010)
Administration	-0.007***	-0.017	Low education	-0.011***	-0.021***
	(0.003)	(0.011)		(0.002)	(0.006)
Arts	-0.009***	-0.017	Medium education	-0.007***	-0.016***
	(0.004)	(0.013)		(0.001)	(0.005)
Construction	-0.017***	-0.018**	Mining	-0.041***	-0.011
	(0.002)	(0.009)		(0.005)	(0.027)
Education	-0.038***	-0.034***	Other services	0.005	-0.009
	(0.002)	(0.007)		(0.004)	(0.014)
Electric, gas	-0.040***	-0.020	Professional services	-0.005*	-0.011
	(0.003)	(0.017)		(0.003)	(0.010)
Water	-0.045***		Public service	-0.038***	-0.033***
	(0.008)			(0.002)	(0.007)
Finance	-0.023***	-0.013	Real estate	0.001	-0.010
	(0.003)	(0.010)		(0.006)	(0.027)
Health	-0.034***	-0.025***	Transport	-0.024***	-0.013
	(0.002)	(0.008)		(0.002)	(0.011)
Household services	-0.003	-0.029	Water	-0.031***	-0.045***
	(0.004)	(0.031)		(0.004)	(0.011)
ICT	-0.014***	-0.021**	Wholesale, retail	-0.009***	-0.014*
	(0.003)	(0.009)		(0.002)	(0.008)
Manufacturing	-0.024***	-0.024***			
	(0.002)	(0.007)			
Observations	338,792	12,460			

Probit marginal effects. Standard errors in parentheses

**** p<0.01, ** p<0.05, * p<0.1*

Base categories: Male, aged 17-22, divorced, high education, accommodation & food sector, military occupation

Table 21: Obstacles (relative to financial insecurity) – Europe

	Financing business	Other reason		Financing business	Other reason
Female	-0.126***	-0.019	Manager	-0.370	-0.252
	(0.036)	(0.032)		(0.261)	(0.204)
Aged 22-26	-0.011	-1.207***	Professional	-0.363	-0.442**
	(0.165)	(0.129)		(0.253)	(0.200)
Aged 27-31	-0.216	-1.696***	Technician	-0.233	-0.485**
	(0.163)	(0.127)		(0.251)	(0.200)
Aged 32-36	-0.418**	-1.967***	Clerical	-0.179	-0.510**
	(0.163)	(0.128)		(0.253)	(0.202)
Aged 37-41	-0.429***	-1.893***	Services & sales	-0.036	-0.578***
	(0.164)	(0.128)		(0.251)	(0.201)
Aged 42-46	-0.471***	-1.920***	Craft work	0.001	-0.541***
	(0.165)	(0.129)		(0.253)	(0.203)
Aged 47-51	-0.557***	-1.873***	Machinist	-0.028	-0.709***
	(0.166)	(0.130)		(0.255)	(0.206)
Aged 52-56	-0.587***	-1.726***	Elementary	0.277	-0.475**
	(0.168)	(0.131)		(0.253)	(0.204)
Aged 57-61	-0.585***	-1.643***	Household size	0.000	-0.010*
	(0.172)	(0.135)		(0.007)	(0.005)
Aged 62-66	-0.587***	-1.445***	Single	-0.048	0.070
	(0.188)	(0.145)		(0.063)	(0.057)
Aged over 66	-0.523*	-0.637***	Married	-0.181***	0.135***
	(0.301)	(0.208)		(0.056)	(0.051)
Admin.	-0.169*	-0.052	Low education	0.201***	-0.270***
	(0.089)	(0.088)		(0.057)	(0.051)
Arts	-0.299**	0.149	Medium educ.	0.127***	-0.195***
	(0.131)	(0.116)		(0.046)	(0.037)
Construction	-0.391***	0.066	Mining	-0.728**	0.206
	(0.087)	(0.085)		(0.311)	(0.260)
Education	-0.251***	0.038	Other services	-0.136	0.166
	(0.094)	(0.083)		(0.112)	(0.106)
Electric, gas	-0.473**	-0.360*	Professional serv.	-0.401***	0.277***
	(0.208)	(0.185)		(0.104)	(0.086)
Water	-0.922	0.339	Public service	-0.501***	0.012
	(0.829)	(0.438)		(0.090)	(0.082)
Finance	-0.539***	-0.005	Real estate	-0.321	0.026
	(0.126)	(0.099)		(0.200)	(0.160)
Health	-0.335***	0.182**	Transport	-0.293***	-0.074
	(0.085)	(0.076)		(0.090)	(0.089)
Household	-0.189	0.105	Water	-0.117	0.021
	(0.138)	(0.147)		(0.166)	(0.170)
ICT	-0.463***	0.021	Wholesale, retail	-0.196***	0.037
	(0.117)	(0.096)		(0.065)	(0.066)
Manufactures	-0.275***	0.074			
	(0.073)	(0.072)			
Observations	29,893				

Multinomial logit regression relative to base category of financial insecurity. Standard errors in parentheses

**** p<0.01, ** p<0.05, * p<0.1*

Base categories: Male, aged 17-22, divorced, high education, accommodation & food sector, military occupation

8 Summary and policy implications

Governments promote entrepreneurship for a variety of reasons, with the key consideration that entrepreneurs and small businesses are an important driver of economic growth. They can create new jobs[10], stimulate innovation, and help to diversify and strengthen local economies. To this end, the distinction between opportunity and necessity as motivations for self-employment (and hence the distinction between self-employment and entrepreneurship) are important to bear in mind in the design of policy and the assessment of its impact. By supporting and promoting entrepreneurship, Governments can help create new job opportunities and stimulate economic growth by fostering competition and productivity.

In developing and implementing public policy on entrepreneurship, however, it is important to have clarity as what exactly we are aiming to achieving: is our goal to simply achieve greater levels of self-employment or are we aiming to achieve something more? To some degree, State supports for self-employment will complement the objectives of public policy on entrepreneurship. By contrast, necessity self-employment (and potentially dependent self-employment) may be better categorised as creating a single job but are unlikely to provide any broader economic stimuli or to provide any impetus towards greater levels of innovation.

There are various policies that Governments can use to promote entrepreneurship but when considering barriers to entrepreneurship – from access to finance to administrative burden to fall-back supports during periods of illness – it is important to bear in mind that these vary by any target cohort. For instance, the importance of different considerations will likely vary depending on the circumstances of a given aspirant entrepreneur, whether these be age-related or otherwise. An important issue therefore is recognising that a '*one size fits all*' approach cannot work, and it is important to craft, and target supports accordingly.

Indeed, against a backdrop of ongoing change – decarbonisation, digitisation, automation, A.I. and beyond – it is worth considering whether the formulation of entrepreneurship policy will require some degree of strategic foresight going forward. Specifically, when developing and evaluating public policy in this space it will become increasingly important to have due regard for changing economic norms and to look to the emergent challenges and barriers likely to be encountered by entrepreneurs in the future (rather than just those apparent today).

The results in this paper suggest that one of the most significant barriers to entrepreneurship is lack of access to finance and this is an area that is regularly the focus of policy support. The importance of finance as an obstacle is noticeably lower in Ireland than elsewhere in Europe. For instance, access to finance was cited as the main difficulty by 12% of those aspiring to self-employment in Ireland (compared to 19.3% of respondents across all countries). This likely reflects the availability of a broad array of funding supports made available by State enterprise bodies, ranging from feasibility grants to accelerator programmes to equity investments. Similarly, the results presented above also suggest

[10] With the exception of sole traders

that considerations related to finance and administration of a business tend to be cited as the main difficulty encountered in being self-employed.

Looking at self-employment participation by age group, the results presented here also indicate that younger persons are significantly less likely to be self-employed. In the case of Ireland, younger persons have a self-employment rate of just 2.1% (compared to an overall average of 12.1%). It may seem intuitive that a younger person may be less likely to generate their own employment than their older counterparts, but it is worth noting that younger persons in Ireland are less likely to do so then their European counterparts (5.3%). A key issue then when considering policy supports for younger aspiring entrepreneurs relates to how we conceive of their specific barriers to entry and what policymakers can do in this space. In an Irish context, this would suggest a continuing need to develop soft supports such as mentoring programmes alongside initiatives to encourage 'founders' to re-invest and assist new 'would-be' entrepreneurs.

A recent report by the OECD and the European Commission (2020) considered measures to encourage youth entrepreneurship in Portugal. This analysis has relevance to Ireland. It focussed on the importance of soft supports such as the development of networking opportunities for young entrepreneurs and the value-added by such measures: *'Youth typically have smaller professional networks due to their limited experience. This affects their ability to find partners, secure funding, but also identify support. There are limited options for networking for youth entrepreneurs in Portugal, and support programmes typically do not include a networking component. Stakeholders highlighted that further opportunities for connection could help youth entrepreneurs expand their networks but also be inspired by role models with similar trajectories'.*

Indeed, a recent update to the series of *Missing Entrepreneurs* reports (OECD and the European Commission, 2021) noted that there would be '*an additional 9 million early-stage entrepreneurs in the EU if everyone were as active as 30–49-year-old men'* and they attribute c.10% of this gap to a relative absence of younger entrepreneurs. This research finds that policymakers can address market and institutional failures impeding youth entrepreneurship through awareness raising and educational interventions, but this does not extend to attempting to '*pick winners'*. Rather, it is important to develop good practice centred on offering supports in stages where proven projects receive additional support over time.

The results presented above also suggest that considerations related to personal finances are another factor cited as the main difficulty encountered in being self-employed. More specifically, close to 16% of Irish respondents cited a lack of sickness income as the main difficulty (compared to 8% of all respondents). A lack of social protection coverage was cited as the main reason for not being self-employed by 4% of all respondents and 3% of Irish respondents. In more recent years, public policy in Ireland has sought to address these concerns as a range of Government benefits have been extended to the self-employed by *'making benefits available such as paternity benefit, treatment benefit and the invalidity pension, we are putting money back in the pockets of self-employed people, while also giving them a stronger safety net'* (LEO, 2020).

Finally, the evidence indicates the gender disparities that exist in self-employment in Ireland and all countries. This aligns with the results of the aforementioned *Missing Entrepreneurs* report which attributed c.80% of the shortfall to the relative absence of female entrepreneurs. While self-employment can be a viable option for individuals seeking greater flexibility and autonomy in their work, it is essential to ensure that gender biases and barriers do not prevent women from fully participating in this field. Addressing these disparities may require targeted policies and programs that promote gender equality in entrepreneurship and provide support and resources to female entrepreneurs.

References

Amorós, J.E., Ciravegna, L., Mandakovic, V. and Stenholm, P. (2019). '*Necessity or opportunity? The effects of State fragility and economic development on entrepreneurial efforts*' Entrepreneurship Theory and Practice. 43 (4). 725-750.

Anokhin, S. and Wincent, J. (2012). '*Start-up rates and innovation: A cross-country examination'*. Journal of International Business Studies. 43 (1). 41-60.

Fairlie, R.W. and Fossen, F.M. (2018). '*Opportunity versus necessity entrepreneurship: two components of business creation'*. IZA Discussion Paper Series.

Government of Ireland (2022). '*White Paper on Enterprise*'. white-paper-on-enterprise-2022-2030.pdf

Hamilton, B.H. (2000). '*Does entrepreneurship pay? An empirical analysis of the outcomes to self-employment*'. Journal of Political Economy. 108 (3). 604–631. http://dx.doi.org/10.1086/262131.

Heyes, J. and Hastings, T. (2017). '*The Practices of Enforcement Bodies in Detecting and Preventing Bogus Self-Employment*'. European Labour Authority. Study Practices of enforcement bodies detecting preventing bogus self-employment.pdf (europa.eu)

Horn, J.T., Lovallo, D.P., and Viguerie, S.P. (2005). '*Beating the odds in market entry'*. McKinsey Quarterly (McKinsey & Co.): Beating the odds in market entry | McKinsey

Kotan, M. (2010). '*Freedom or happiness? Agency and subjective well-being in the capability approach*'. The Journal of Socio-Economics. 39. (3). 369-375.

Kritikos, A.S. (2014). '*Entrepreneurs and their impact on jobs and economic growth*'. IZA World of Labour (2014: 8).

Lawless, M., P. O'Brien and L. Rehill (2024). `Flows in and out of self-employment', forthcoming.

LEO (2020). Taoiseach joins Ministers Doherty and McGrath to launch self-employed benefits awareness campaign. Taoiseach joins Ministers Doherty and McGrath to launch self-employed benefits awareness campaign - Local Enterprise Office

Lucas, R. (1978). '*On the size distribution of business firms*'. The Bell Journal of Economics. 2. 508-523.

Millán, A., Millán, J.M., and Cacador-Rodrigues, L. (2020). '*Disclosing 'masked employees' in Europe: job control, job demands and job outcomes of 'dependent self-employed workers'*. Small Business Economics. 55. 461-474. http://dx.doi.org/10.1007/s11187-019-00245-7.

Millán, J.M., Hessels, J., Thurik, R., & Aguado, R. (2013). '*Determinants of job satisfaction: a European comparison of self-employed and paid employees'*. Small Business Economics. 40 (3). 651–670. http://dx.doi.org/10.1007/s11187-011-9380-1.

Muehlberger, U. (2007). *Dependent self-employment. Workers on the border between employment and self-employment*. Houndmills: Palgrave Macmillan. http://dx.doi.org/10.1057/9780230288782.

OECD (2019). *SME and Entrepreneurship Policy in Ireland*. OECD Studies on SMEs and Entrepreneurship. OECD Publishing, Paris. https://doi.org/10.1787/e726f46d-en.

OECD/European Union (2020). '*Policy Brief on recent developments in youth entrepreneurship*'. Luxembourg: Publications Office of the European Union.

Román, C., Congregado, E., and Millán, J.M. (2011). '*Dependent self-employment as a way to evade employment protection legislation*'. Small Business Economics. 37(3). 363–392. http://dx.doi.org/10.1007/s11187-009-9241-3.

Shane, S. (2009). '*Why encouraging more people to become entrepreneurs is bad public policy'.* Small Business Economics. 33 (2). 141-149. http://dx.doi.org/10.1007/s11187-009-9215-5.

Stewart, A., and Stanford, J. (2017). '*Regulating work in the gig economy: what are the options?*' The Economic and Labour Relations Review. 28(3). 420–437. http://dx.doi.org/10.1177/1035304617722461.

Torrini, R. (2005). '*Cross-country differences in self-employment rates: the role of institutions*'. Labour Economics (2005, 12: 661-683).

Appendix

Table A1: Number of observations and share of total sample by country

	All sectors		Excluding agriculture	
	Number	Percentage	Number	Percentage
AT	34,960	6.66	34,020	6.81
BE	19,734	3.76	19,498	3.9
BG	13,166	2.51	12,066	2.42
CH	7,300	1.39	7,127	1.43
CY	4,464	0.85	4,365	0.87
CZ	18,464	3.51	17,901	3.58
DE	19,004	3.62	18,789	3.76
DK	13,194	2.51	12,929	2.59
EE	7,157	1.36	6,836	1.37
ES	37,301	7.1	35,458	7.1
FI	11,550	2.2	11,127	2.23
FR	9,226	1.76	8,568	1.72
GR	19,222	3.66	16,173	3.24
HR	2,861	0.54	2,652	0.53
HU	23,547	4.48	21,894	4.38
IE	17,554	3.34	16,736	3.35
IS	2,074	0.39	1,986	0.4
IT	49,400	9.4	47,404	9.49
LT	7,284	1.39	6,686	1.34
LU	4,352	0.83	4,306	0.86
LV	4,461	0.85	4,114	0.82
MT	5,421	1.03	5,351	1.07
NL	41,639	7.93	40,888	8.19
NO	13,865	2.64	13,551	2.71
PL	25,313	4.82	23,083	4.62
PT	16,968	3.23	15,649	3.13
RO	23,182	4.41	18,790	3.76
SE	19,306	3.68	18,996	3.8
SI	6,835	1.3	6,611	1.32
SK	9,386	1.79	9,110	1.82
UK	37,105	7.06	36,677	7.35
Total	**525,295**	**100**	**499,341**	**100**