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# Evaluating the prevalence and distribution of dependent self-employment: some lessons from the European Working Conditions Survey

Colin C. Williams  and Ioana Alexandra Horodnic 

## ABSTRACT

This article advances understanding of the prevalence and distribution of dependent self-employment. Analysing the 2015 European Working Conditions Survey of 35,765 employees in 28 European countries, the dependent self-employed are found to comprise 4.3% (1 in 23) of the EU workforce, 47% of all those reporting themselves as self-employed without employees and 31% of all self-employed. The prevalence of dependent self-employment, however, is found to have decreased since the previous 2010 survey, is not found to be concentrated among marginalised population groups and is significantly more likely in agriculture, forestry and fishing, arts, entertainment, recreation and other service activities, and the household services sector. The implications for theorising and tackling dependent self-employment are discussed.

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## 1 INTRODUCTION

Given that formal, full-time and permanent waged employment (i.e. the standard employment relationship) has been the principal means used for allocating rights and social protection, its potential decline raises issues for working conditions, rights and benefits. Although many countries have been gradually extending protective rights to non-standard employees (Conaty *et al.*, 2016; Eichhorst *et al.*, 2013; Forde and MacKenzie, 2007; Gialis *et al.*, 2017; Hatfield, 2015; ILO, 2016; Pedersini and Coletto, 2010), the ‘self-employed’ have been seldom considered when extending such protective rights. Indeed, in recent years, there has been a small but burgeoning literature that has raised concerns that employers are falsely classifying employees as self-employed in order to circumvent collective agreements, labour laws (e.g. minimum wages, working time legislation, protection in case of redundancy), employment tax and other employer liabilities implied in the standard contract of employment (Eichhorst *et al.*, 2013; Fehringer, 2014; Gialis *et al.*, 2017; Hatfield, 2015; ILO, 2016; Thörnquist, 2013, 2014, 2015). Commonly referred to as ‘dependent self-employment’, this can be defined as employment relationships where workers are classified as formally self-employed but present some characteristics of dependent

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employees, and thus have a *de facto* employment relationship, if not *de jure*, because they do not have either more than one client, the authority to hire staff and/or the authority to make important strategic decisions about how to run the business (Eurofound, 2013, 2016a,b).

The aim of this article is to advance the emergent literature on this employment relationship by examining its prevalence and distribution in the European Union. This will put under the spotlight the dominant depiction of dependent self-employment as an employment relationship that has rapidly grown in recent years and is undertaken by 'marginalised' population groups. To do so, the first known extensive multi-national analysis of the extent and distribution of dependent self-employment will be undertaken, reporting data from the 2015 European Working Conditions Survey (EWCS).

To advance knowledge on dependent self-employment, therefore, section 2 reviews the emergent literature to reveal a series of dominant depictions about its prevalence and distribution that are presented as hypotheses to be evaluated. To test these hypotheses, section 3 then introduces the data used, namely the 2015 EWCS on dependent self-employment in the 28-member states of the European Union (EU28), along with the variables and techniques used to evaluate its prevalence and distribution. Section 4 then reports the results on its prevalence and distribution in the EU28. Revealing that many of the dominant depictions regarding its prevalence and distribution are not supported, section 5 then concludes by discussing the implications for theorising and tackling dependent self-employment.

## **2 DEPENDENT SELF-EMPLOYMENT: ITS PREVALENCE AND DISTRIBUTION**

Dependent self-employment has been variously referred to as 'fake', 'false', 'sham' or 'misclassified' self-employment, or 'disguised employment' (Forde and MacKenzie, 2007; Harvey and Behling, 2008; Kautonen *et al.*, 2009, 2010; Mandrone *et al.*, 2014). Despite this array of terms, however, there is a relatively strong consensus on how to define this employment relationship. Even if one singular definition is not universally used (Fehringer, 2014; Thörnquist, 2014), such an employment relationship is seen to exist in the 'grey zone' between pure dependent employment and genuine self-employment (Ana, 2009; Böheim and Muehlberger, 2006; Eichhorst *et al.*, 2013; Jorens, 2009, 2010; Kautonen *et al.*, 2010; Pedersini and Coletto, 2010; Thörnquist, 2013).

As the ILO (2016: 36) highlight, employment relationships lie on a spectrum between pure self-employment at one end and pure dependent employees at the other end, and those in the middle range from 'disguised employment relationships' towards the dependent employment end of the spectrum, in which 'an employer treats an individual as other than an employee in a manner that hides his or her true legal status as an employee', to 'dependent self-employment' towards the self-employment end of the spectrum in which 'workers perform service for a business under a contract different from a contract of employment but depend on one or a small number of clients for their income and receive direct guidelines regarding how the work is done'.

Although some countries do not have well-developed criteria to distinguish between pure dependent employment, pure self-employment and the 'grey zone' of what we here term dependent self-employment, those countries possessing them tend to have slightly different criteria (Heyes and Hastings, 2017). However, the most

common criteria used across European countries to define the self-employed are that (i) they have more than one client; (ii) they have the authority to hire staff; and/or (iii) they have the authority to make important strategic decisions about how to run the business (Eurofound, 2016a, b). Dependent self-employment is therefore in this article defined as an employment relationship where workers report themselves as formally self-employed, have no employees and possess two or more of the following characteristics of dependent employees: they only work for one client; they do not have the authority to hire staff, and/or they do not have the authority to make important strategic decisions about how to run the business.

Until now, anecdote has often substituted for rigorous empirical evidence-based research when discussing the prevalence and distribution of dependent self-employment. Here, therefore, we review what is so far known and assumed about its prevalence and distribution, to develop some propositions that can be tested using an extensive cross-national data set, namely the 2015 EWCS.

## 2.1 Prevalence of dependent self-employment

Although the share of total employment that is self-employment has been relatively stable for the past decade in the EU28 (Eurofound, 2016b), a widely held view is that technological changes are transforming the nature and quality of many existing and new jobs. The expansion of work organised through online platforms and mobile device applications (apps), exemplified by Uber and Lyft, has led to debates about whether the 'self-employed' often found in these realms need to be reclassified as dependent employees or whether there is a need for a new third category of employment relationship, somewhere between dependent employment and self-employment, so that such workers enjoy protections typically associated with the traditional dependent employment relationship (e.g. Heyes and Hastings, 2017; ILO, 2016; Taylor, 2017). In short, this discussion is not about making all work standard but rather, all work decent. It is about securing decent work that is productive and delivers a fair income, which ensures security in the workplace and social protection, better prospects for personal development and social integration, freedom for people to voice their concerns, organise and participate in the decisions that affect their lives, and equality of opportunity and treatment for all women and men (ILO, 2016).

The widespread assumption underpinning this discussion has been that there is growth of jobs in this 'grey area', not least because it is cheaper for employers to hire self-employed persons to perform work than it is to hire employees. Indeed, a UK report estimates that the incentive for employers to hire self-employed workers through outsourcing and sub-contracting arrangements is at least 13.8% of labour costs because employer national insurance contributions do not need to be paid (Taylor, 2017). This, however, is not the only benefit of hiring on a self-employed basis, or firing employees and re-hiring them as self-employed to perform the same work. Such a practice also allows employers to evade minimum wage rates, compensation in the case of dismissal, higher wages based on seniority, holiday payments and the right of an employee to be paid if sick and incapable of work. Dependent self-employment thus circumvents collective agreements, labour laws, employment tax and other employer liabilities that would otherwise apply (Thörnquist, 2011: 102).

When recognition of these benefits to employers is coupled with the widespread and popular view that dependent self-employment is particularly prevalent in businesses associated with online platforms and mobile device applications (e.g. Taylor, 2017),

the argument has emerged that dependent self-employment is becoming extensively used and is rapidly growing (Ebisui, 2012; Eichhorst *et al.*, 2013; Taylor, 2017; Thörnquist, 2013). However, little rigorous empirical evidence currently exists of whether this is indeed the case. For this reason, it is necessary to evaluate the following proposition:

*Hypothesis 1: dependent self-employment is becoming a more prevalent employment relationship in the contemporary labour market.*

## **2.2 Distribution of dependent self-employment**

It is not just the prevalence but also the distribution of dependent self-employment that needs to be empirically tested. Dependent self-employment has been sometimes depicted as a ‘precarious’ form of employment. This is because by employing somebody as self-employed rather than in subordinate employment, employers can evade employment rights and entitlements (e.g. holiday/sickness pay) attached to the employment of an employee, as well as taxes, which leads this practice to be considered a type of precarious work (Congregado *et al.*, 2012; Fehringer, 2014; Thörnquist, 2014). Indeed, reflecting the dominance of its depiction as a precarious form of work, a survey of employment experts in 12 EU Member States for the project *Precarious Work and Social Rights* conclude that dependent self-employment is the second most common form of work associated with precarious work, after undeclared work (Thörnquist, 2014). Eichhorst *et al.* (2013) similarly argue that even if dependent self-employment is not a form of precarious work *per se*, in most instances this is the case. If dependent self-employment is precarious work, then it might also be the case that such work is conducted by groups normally marginalised in the formal labour market. To evaluate who conducts dependent self-employment, therefore, the following propositions can be evaluated:

*Hypothesis 2: groups normally found to be marginalised in the formal labour market are those most likely to be dependent self-employed.*

*Hypothesis 2a: women are more likely to be engaged in dependent self-employment than men.*

*Hypothesis 2b: younger age groups are more likely to engage in dependent self-employment than older age groups.*

*Hypothesis 2c: those not born in the country in which they work, and their parents were not born in the country in which they work, are more likely to engage in dependent self-employment.*

*Hypothesis 2d: those living in larger households are more likely to engage in dependent self-employment than those living in single person households.*

*Hypothesis 2e: those living in households who find it difficult to make ends meet are more likely to engage in dependent self-employment than those living in households who find it easy to make ends meet.*

Following on from the previously discussed reasons for employers using dependent self-employment (e.g. evading minimum wage rates, compensation in the case of dismissal), there is a widespread view that it is in the private sector that this employment relationship is most commonly found (Congregado *et al.*, 2012; Fehringer, 2014; Thörnquist, 2014). There is also a view that it is most commonly concentrated in particular sectors, reflected in the fact that most of the small-scale studies so far conducted have focused upon specific NACE level-2 sectors, namely construction (Behling and Harvey, 2015; Böheim and Muehlberger, 2006; Eichhorst *et al.*, 2013; Fehringer, 2014; ICTU, 2015; Seeley, 2016; Thörnquist, 2013, 2014; Wickham and Bobek, 2016), transport and haulage (Eichhorst *et al.*, 2013; Thörnquist, 2013), insurance and accounting, architecture and the creative sector (Eichhorst *et al.*, 2013), elderly care (Fehringer, 2014) and the stripping industry (Cruz *et al.*, 2017). The following hypotheses can be therefore evaluated:

*Hypothesis 3: there are significant variations in the prevalence of dependent self-employment in different NACE level-2 economic sectors.*

*Hypothesis 4: those working in private sector are significantly more likely to be engaged in dependent self-employment than those in the public or not-for-profit sectors.*

### 3 METHODOLOGY: DATA, VARIABLES AND ANALYTICAL METHODS

#### 3.1 Data

To evaluate these hypotheses regarding the prevalence and distribution of dependent self-employment, data from the EWCS are here reported. The EWCS interviews those aged 15 and over (16 and over in Bulgaria, Norway, Spain and the UK) living in private households and in employment who did at least 1 hour of work for pay or profit during the week prior to the interview. In each country, a representative sample is surveyed which is stratified by region (NUTS 2 or equivalent) and the level of urbanisation. The geographical coverage of the sixth EWCS conducted in 2015 covers the 28 EU member states and seven other countries (Albania, FYR Macedonia, Montenegro, Norway, Serbia, Switzerland and Turkey) and comprises 43,850 interviews. Here, we confine analysis to the EU28. In 2015, this comprised 35,765 interviews. To evaluate hypothesis H1 that dependent self-employment is growing, however, we also evaluate the 2010 EWCS which asked the same questions to identify dependent self-employment and used the same sampling methodology as the 2015 EWCS.

#### 3.2 Variables

To identify the dependent variable of dependent self-employment, five questions asked in the EWCS are analysed:

- Are you working as an employee or are you self-employed?
- Regarding your business, do you (i) Have employees—(working for you); (ii) Have the authority to hire or dismiss employees?; (iii) Generally, have more than one client or customer.
- To what extent do you agree or disagree with the following statements? I make the most important decisions on how the business is run.



The dependent self-employed are here defined as those who report themselves as self-employed, do not have employees and comply with two or more of the following three criteria: (i) they have only one client; (ii) they have no authority to hire staff; and/or (iii) they have no authority to make important strategic decisions. The dependent variable is coded 1 for those in dependent self-employment and zero otherwise.

To estimate whether there is a growth of dependent self-employment (i.e. hypothesis H1), therefore, the number of self-employed without employees complying with two or more of these three criteria are enumerated, and compared with both: the total number in employment; the number of 'genuine' self-employed without employees (i.e. those not fulfilling any of the three criteria) and the number of all genuine self-employed (again not fulfilling any of the three criteria) both with and without employees. The figures for the prevalence of dependent self-employment in the 2015 EWCS are then compared with the results of the 2010 EWCS where the same questions were asked in the same manner.

To understand the distribution of dependent self-employment across the working population (Hypothesis H2), independent variables associated with the various socio-demographic characteristics of individual workers are examined, namely: gender (Hypothesis H2a), age (Hypothesis H2b), respondents' and their parents' nationality (Hypothesis H2c), household size (Hypothesis H2c) and their household's ability to make ends meet (Hypothesis H2e). To evaluate the distribution of dependent self-employment across sectors (Hypotheses H3 and H4), variables on NACE 2-level sectors and broader sectors were analysed. Table 4 describes in detail each of the independent variables used in the analysis.

### 3.3 Analytical methods

For both the descriptive statistics and regression analysis, a weighting scheme was used which takes the relative size of the workforce in each of the countries into account, as recommended in EWCS 2015 technical report (Eurofound, 2016). For the descriptive statistics, we analysed all cases available for each analysed variable (don't know and refusal were excluded). For the multivariate analysis, meanwhile, and to avoid exclusion of some individuals because they did not provide answers to every question related to their employment status, socio-demographic characteristics and/or business characteristics, we used multiple imputations (Bartlett and Carpenter, 2013; Rubin, 1987). Ten imputations were simulated through a system of chained equations for every missing value.

To evaluate whether there was a growth of dependent self-employment (hypothesis H1), we used descriptive statistics that employed the EU28 aggregate level weighting scheme. To evaluate the distribution of the dependent self-employed across employee groups, organisations and sectors (Hypothesis H2-H4), we conducted a multilevel mixed-effect logistic regression analysis across the individual-level variables. Below, we report the results.

## 4 FINDINGS

### 4.1 Prevalence of dependent self-employment

The EWCS measures the prevalence of dependent self-employment by examining whether a person reports themselves as self-employed and without employees and in addition, possess two or more of the following criteria: they have only one client;

they have no authority to hire staff, and/or no authority to make important strategic decisions. Furthermore, to enable a more nuanced analysis of the prevalence of dependent self-employment, if they comply with all three criteria, they are classified as 'pure' dependent self-employed, and when they comply with any two of the three criteria, they are classified as 'grey' dependent self-employed.

In 2010, Eurofound (2013) state that 0.9% of total employment in the EU27 was 'pure' dependent self-employment (i.e. complying with all three criteria). However, this figure they produced excludes the agricultural sector. When the agriculture sector is included, and the prevalence of dependent self-employment is recalculated, the finding is that 1.3% of total employment in 2010 was 'pure' dependent self-employment. Moreover, when those self-employed workers without employees complying with only two of the three criteria (i.e. 'grey' dependent self-employed) are estimated, an additional 4.0% of total employment in the EU27 in 2010 is 'grey' dependent self-employment. The outcome is that, in 2010, a total of 5.3% of total employment was (pure or grey) dependent self-employment.

By 2015, the 'pure' dependent self-employed had negligibly grown to 1.4% of total employment in the EU28. Including the self-employed without employees complying with only two of the three criteria (i.e. 'grey' dependent self-employed), an additional 2.9% of total employment in the EU28 are in 'grey' dependent self-employment (compared with an additional 4.0% in 2010 in the EU27). The result is that in 2015, 4.3% of total employment in the EU28 (1 in 23 jobs) can be classified as ('pure' or 'grey') dependent self-employment, compared with 5.3% (1 in 19) in 2010 in the EU27. In consequence, although 'pure' dependent self-employment negligibly grew from 1.3% to 1.4% of total employment between 2010 and 2015, 'grey' dependent self-employment decreased from 5.3% to 4.3% of total employment. Hypothesis H1, therefore, is not confirmed when examining the prevalence of ('pure' and 'grey') dependent self-employment as a proportion of total employment.

Is it the case, nevertheless, that the dependent self-employed are becoming a greater proportion of all who report themselves as self-employed without employees? In 2015, as Table 1 displays, 53% (compared with 49% in 2010) of those reporting themselves as self-employed without employees were 'genuine' independent self-employed workers, while 47% (51% in 2010) were ('pure' or 'grey') dependent self-employed, with 15% (12% in 2010) meeting all three criteria (i.e. 'pure' dependent self-employed), and 32% (39% in 2010) meeting two of the three criteria of dependent self-employment (i.e. 'grey' dependent self-employed). Hence, the dependent self-employed are not becoming a greater proportion of all who report themselves as self-employed without employees, providing further evidence to refute hypothesis H1 that dependent self-employment is becoming a more prevalent employment relationship.

When the self-employed with employees are included and one examines the proportion of all self-employed (with or without employees) who are dependent self-employed, 31% of all self-employed in 2015 are ('pure' or 'grey') dependent self-employed, compared with 36% in 2010. This decreasing proportion of all self-employed that are dependent self-employed thus provides yet further evidence to refute hypothesis H1 that dependent self-employment is becoming a more prevalent employment relationship.

Whether dependent self-employment is evaluated as a proportion of total employment, self-employed without employees, or all self-employed, therefore, the same finding results. Between 2010 and 2015, there was a decline in the prevalence of dependent self-employment in the overall EU labour market.



Table 1: Participation in dependent self-employment in the EU28: By country

Region/ Country	Dependent self-employed							
	Percent of:						Of which:	
	All employment		Self-employed without employees		All self-employed			
	2015	2010	2015	2010	2015	2010	2015	2010
EU-28/ EU-27	4 (-)	5	47 (-)	51	31 (-)	36	100	100
Austria	5 (+)	3	64 (+)	47	43 (+)	26	2.2 (+)	1.1
Belgium	2 (-)	3	34 (-)	36	18 (-)	22	1.1 (-)	1.2
Bulgaria	4 (+)	3	40 (-)	41	26 (=)	26	1.1 (+)	0.8
Croatia	4 (=)	4	58 (+)	47	39 (+)	27	0.6	--
Cyprus	5 (-)	6	38 (-)	52	26 (-)	34	0.2 (=)	0.2
Czech Republic	5 (-)	6	58 (+)	48	37 (+)	33	2.7 (+)	2.6
Denmark	1 (=)	1	17 (-)	35	11 (-)	16	0.2 (-)	0.4
Estonia	2 (-)	4	55 (-)	59	24 (-)	39	0.1 (-)	0.2
Finland	5 (=)	5	44 (-)	58	29 (-)	43	1.2 (+)	1.0
France	2 (-)	4	45 (-)	46	26 (-)	33	6.1 (-)	9.4
Germany	2 (-)	3	35 (-)	52	18 (-)	30	7.4 (-)	10.8
Greece	8 (-)	12	30 (-)	45	21 (-)	35	2.8 (-)	4.7
Hungary	4 (-)	5	45 (-)	66	30 (-)	41	1.6 (=)	1.6
Ireland	5 (=)	5	44 (-)	46	28 (-)	31	1.0 (+)	0.8
Italy	8 (+)	7	45 (-)	46	32 (=)	32	18.2 (+)	13.0
Latvia	4 (+)	3	64 (+)	61	35 (-)	38	0.4 (+)	0.2
Lithuania	5 (-)	6	72 (+)	66	42 (-)	49	0.7 (=)	0.7
Luxembourg	3 (=)	3	49 (+)	48	34 (+)	27	0.1 (=)	0.1
Malta	4 (+)	3	47 (+)	40	35 (+)	25	0.1 (+)	0.0
Netherlands	3 (-)	5	32 (-)	46	23 (-)	36	2.6 (-)	4.0
Poland	5 (-)	7	61 (+)	42	42 (+)	36	8.7 (-)	9.7
Portugal	9 (+)	6	56 (+)	44	41 (+)	35	4.3 (+)	2.5
Romania	8 (-)	15	80 (-)	84	63 (-)	75	7.2 (-)	12.0
Slovakia	6 (+)	4	67 (+)	42	52 (+)	33	1.5 (+)	0.9
Slovenia	6 (+)	1	55 (+)	22	41 (+)	12	0.5 (+)	0.1
Spain	3 (-)	4	29 (-)	52	20 (-)	35	6.4 (-)	7.0
Sweden	1 (-)	3	16 (-)	35	12 (-)	27	0.4 (-)	1.0
United Kingdom	6 (=)	6	56 (-)	58	43 (=)	43	20.6 (+)	14.0

Is it the case, however, that dependent self-employment is becoming a more prevalent form of employment relationship in some member states? To answer this, Table 1 reports the changes in the prevalence of dependent self-employment at a member state level between 2010 and 2015. This confirms H1 (i.e. that dependent self-employment has grown as a proportion of total employment) in eight EU member states (Austria, Bulgaria, Italy, Latvia, Malta, Portugal, Slovakia and Slovenia). Meanwhile, H1 is

refuted in a further 15 EU member states where it has declined and another five where it has remained the same share of total employment.

Indeed, a finding of this country-level analysis is that 38.5% of all dependent self-employment in the EU28 in 2015 is concentrated in just two countries, namely the United Kingdom (where 20.6% of all dependent self-employment in the EU is found) and Italy (where 18.2% of all dependent self-employment in the EU is found). Between 2010 and 2015, moreover, these two countries increased their share of all EU dependent self-employment, from 14% to 20.6%, and from 13% to 18.2%, in the UK and Italy, respectively.

In sum, the hypothesis (H1) that dependent self-employment is becoming a more prevalent employment relationship in the contemporary labour market is confirmed in eight EU member states (Austria, Bulgaria, Italy, Latvia, Malta, Portugal, Slovakia and Slovenia). It is not confirmed in the remaining 20 EU member states. Neither is it confirmed at the EU-level. In 2015, dependent self-employment comprised 4.3% of total employment in the EU28 (compared with 5.3% in 2010 in the EU27), 47% of all self-employment without employees (51% in 2010) and 31% of all self-employment (36% in 2010). It is important to be aware, however, that these findings only relate to the 2010 to 2015 period. Whether the longer-term trend is towards dependent self-employment needs to be evaluated. However, no known datasets are available to do so.

## 4.2 Distribution of dependent self-employment

Table 2 reports who engages in dependent self-employment and the organisations and sectors in which such work is concentrated. Evaluating who conducts dependent self-employment, the descriptive statistics reveal that although women are less likely to be in dependent self-employment than men (4% of women in employment compared with 5% of men), only 29% of men in self-employment are dependent self-employed compared with 36% of self-employed women. Nevertheless, men comprise 58% of all the dependent self-employed. Similarly, younger age groups are less likely to participate in dependent self-employment. There is a steady rise in the proportion of the total workforce employed in dependent self-employment as age increases, with 70% of dependent self-employment conducted by those aged 40 and over. Those who were not born themselves in the country and whose parents were not born in the country are more likely to be engaged in dependent self-employment, and the same is the case for those living in single person households, and households who find it difficult to make ends meet. However, the differences are negligible.

Dependent self-employment, moreover, is not confined to the private sector. Although 5% of all employment in the private sector (1 in 20 jobs) is dependent self-employment, this figure is 9% in the not-for-profit sector. Nevertheless, given the small size of the not-for-profit sector, 87% of all dependent self-employment is in the private sector, and just 7% in the not-for-profit sector. Dependent self-employment, although present, is relatively minimal in the public sector.

Turning to whether dependent self-employment is evenly distributed across economic sectors, the finding is that it is not; 27% of those working in agriculture, forestry and fishing sector are dependent self-employed, 13% of those working for households as employers and 11% of those working in arts, entertainment, recreation and other service activities. Given that the number working in agricultural, forestry and fisheries is relatively small, however, 22% of all dependent self-employment is

Table 2: Participation in dependent self-employment: By socio-demographic and firm characteristics

Socio-economic characteristics	Dependent self-employed		
	Percent of:		% of all dependent self-employed:
	All employment	Self-employed	
Gender			
Female	4	36	42
Male	5	29	58
Age			
15–24 years old	3	55	5
25–39 years old	3	31	25
40–54 years old	4	28	39
55+ years old	7	33	31
Respondent and both parents born in the country of residence			
No	5	38	13
Yes	4	30	87
Household size			
One person	5	36	16
2 and more persons	4	31	84
Household ability to make ends meet			
Easily	4	28	60
With difficulty	5	38	40
Sector			
The private sector	5	30	87
The public sector	1	37	4
A joint private-public company	2	32	2
The not-for-profit sector or an NGO/ Other	9	48	7
Economic activities, NACE rev. 2			
Agriculture, forestry and fishing	27	51	22
Industry (except construction)	2	25	7
Construction	7	28	9
Wholesale and retail trade; repair of motors	3	18	10
Transportation and storage	4	44	5
Accommodation and food service activities	2	10	1
Information and communication	5	32	3
Financial and insurance/ real estate activities	3	22	3
Professional, scientific + administrative activities	5	26	11
	2	33	10

*(Continues)*

Table 2. (Continued)

Socio-economic characteristics	Dependent self-employed		
	Percent of:		% of all dependent self-employed:
	All employment	Self-employed	
Public administration, Education, Human health and social work			
Arts, entertainment, recreation and other service activities	11	42	14
Activities of households as employers	13	84	5

in this sector, 14% in arts, entertainment, recreation and other service activities and 11% among professional, scientific and administrative workers. These descriptive statistics thus suggest that dependent self-employment is unevenly distributed across the economic sectors and that those working in sectors such as agriculture and household services are more likely to be dependent self-employed.

To analyse whether these findings on the distribution of dependent self-employment are statistically significant when other variables are considered and held constant, an additive model is used. Model 1 examines the socio-demographic characteristics of the respondents, Model 2 adds the household characteristics alongside the individual's socio-demographic characteristics, and Model 3 adds the sectoral characteristics. Table 3 reports the results of the multilevel mixed-effect logistic regressions.

Model 1 in Table 3 reveals that the propensity to be dependent self-employed is not significantly associated with respondents' and their parents' nationality (refuting hypothesis H2c) and neither importantly, is it significantly associated with whether the household in which they live find it difficult to make ends meet (refuting H2e). It is also the case that men are more likely than women to be dependent self-employed (refuting H2a), as are older age groups compared with the younger population (refuting H2b). Those living in larger households are also less likely to be dependent self-employed compared with those living in single person households (refuting H2d).

Examining the organisations and sectors in which they are employed, the finding is that those working in the public sector or in joint private-public organisations are significantly less likely to be dependent self-employed than those working in the private sector. Those working in the not-for-profit sector, including NGOs, meanwhile, are significantly more likely to be dependent self-employed than those working in private sector (refuting hypothesis H4). However, and considering the NACE level-2 sectors, the dependent self-employed are significantly more likely to work in the agriculture, forestry and fishing sector, arts, entertainment, recreation and other service activities, and household services, thus displaying that dependent self-employment is not evenly distributed across all sectors of the economy (confirming hypothesis H3).

Table 3: Multilevel mixed-effect logistic regressions of the propensity for a worker to be dependent self-employed

Variables	Model 1			Model 2			Model 3		
	$\beta$	se( $\beta$ )	Exp( $\beta$ )	$\beta$	se( $\beta$ )	Exp( $\beta$ )	$\beta$	se( $\beta$ )	Exp( $\beta$ )
Gender (Female)									
Male	0.251***	0.075	1.286	0.256***	0.074	1.291	0.130**	0.061	1.139
Age									
(15–24 years old)									
25–39 years old	0.070	0.131	1.072	0.067	0.131	1.070	0.163	0.127	1.177
40–54 years old	0.421***	0.115	1.524	0.420***	0.114	1.521	0.529***	0.109	1.697
55+ years old	1.190***	0.158	3.287	1.172***	0.157	3.227	0.990***	0.136	2.691
Respondent and both parents born in the country of residence (No)									
Yes	−0.094	0.104	0.911	−0.087	0.104	0.917	−0.027	0.119	0.974
Household size									
(one person)									
2 and more				−0.233***	0.074	0.792	−0.198***	0.074	0.820
Household ability to make ends meet (Easily)									
With difficulty				0.062	0.074	1.064	−0.084	0.068	0.920
Sector (The private sector)									
The public sector							−2.290***	0.228	0.101
A joint private-public company							−0.805***	0.261	0.447
The not-for-profit sector or an NGO/Other							0.404**	0.159	1.498
Economic activities, NACE rev. 2 (Transportation and storage)									

(Continues)

Table 3. (Continued)

	Model 1			Model 2			Model 3		
Agriculture, forestry and fishing							1.894 ***	0.219	6.644
Industry (except construction)							-0.833 ***	0.211	0.435
Construction							0.203	0.178	1.226
Wholesale and retail trade; repair of motors							-0.269	0.195	0.764
Accommodation and food service activities							-0.888 ***	0.247	0.411
Information and communication							0.236	0.303	1.267
Financial and insurance/ real estate activities							0.038	0.317	1.039
Professional, scientific + administrative activities							0.136	0.161	1.146
Public administration, Education, Human health and social work							-0.132	0.176	0.876
Arts, entertainment, recreation and other service activities							1.055 ***	0.151	2.873
Activities of households as employers							0.958 ***	0.262	2.606
Constant	-3.692 ***	0.167	0.025	-3.529 ***	0.172	0.029	-3.421 ***	0.223	0.033
Observations	35,765			35,765			35,765		
Imputations	10			10			10		
Model F test	31.42			23.78			109.36		
Prob. > F	0.000			0.000			0.000		

Note: Significant at

\*\*\*  $p < 0.01$ ,

\*\*  $p < 0.05$ ,

\*  $p < 0.1$ ; Benchmark category, shown in brackets. Source: EWCS (2015); own calculations.



## 5 DISCUSSION AND CONCLUSIONS

Reporting the 2015 EWCS, this article has evaluated the prevalence and distribution of dependent self-employment. In 2015, 1 in 23 jobs were dependent self-employment, but dependent self-employment is found not to have grown between 2010 and 2015 (refuting hypothesis H1). Dependent self-employment comprised 4.3% of total employment in the EU28 in 2015 compared with 5.3% in 2010 in the EU27, 47% of all self-employed workers without employees compared with 51% in 2010 and 31% of all self-employment when the self-employed with employees are included, compared with 36% in 2010. At a country-level, moreover, the hypothesis (H1) that dependent self-employment has become a more prevalent employment relationship between 2010 and 2015 is confirmed in only eight EU member states (Austria, Bulgaria, Italy, Latvia, Malta, Portugal, Slovakia and Slovenia). In 15 EU member states, it has declined and in another five it has remained the same share of total employment.

Moreover, although dependent self-employment is not significantly associated with some specific socio-demographic characteristics of individuals or households associated with marginalised population groups, including nationality, gender, age and the ability of households to make ends meet, there are significant variations in its distribution across sectors. Workers in the public sector are significantly less likely to be dependent self-employed than workers in the private sector. Those working in agriculture, forestry and fishing, arts, entertainment, recreation and other service activities as well as those working for households as employers are more likely to be dependent self-employed than those working in transportation and storage. Therefore, dependent self-employment cannot be theorised as growing and neither can it be viewed as concentrated among groups normally found to be marginalised in the formal labour market.

This decline in the prevalence of dependent self-employment might be perhaps partially related to the growing recognition between 2010 and 2015 that dependent self-employment is a problem, and the consequent actions taken by governments to deal with this problem (see Heyes and Hastings, 2017; Williams and Horodnic, 2017). It has been widely recognised across the EU28 that the misclassification of workers as self-employed has consequences both: for workers, such as the loss of labour law protections (dismissal, holiday pay, sick leave) and collective bargaining coverage; for governments and the wider society, including the loss of tax revenue which otherwise could be used for social inclusion and cohesion purposes (Eichhorst *et al.*, 2013; Thörnquist, 2013, 2014), and for legitimate business, resulting in unfair competitive advantages for enterprises that disguise their subordinate employees under the status of self-employed to reduce their labour costs, resulting in wage dumping (Fehringer, 2014; Jorens, 2009; Seeley, 2010; Thörnquist, 2013, 2014).

Several policy approaches have been therefore so far used to tackle this problem in the European Union. On the one hand, the binary divide between employment and self-employment has been maintained and the approach towards the dependent self-employed has variously included: (i) presumptions that these are dependent employees who fall within the scope of employment protection legislation (e.g. France, Greece, Luxembourg); (ii) reversal of the burden of proving employee status (e.g. Belgium); and (iii) listing criteria that enable the classification of workers as either employees or self-employed (e.g. Austria, Belgium, Germany, Ireland). On the other hand, some countries have introduced a hybrid legal category

of employment relationship that sits between dependent employment and self-employment, which provides these workers with some legal rights that would not exist under the legal status of self-employment, such as in Germany, Italy, the Netherlands and Portugal, and is proposed in the UK in the recent proposal for a 'dependent contractor' employment status (Taylor, 2017). However, there is little current empirical evidence that the adoption of such criteria is directly and significantly correlated with the decline in dependent self-employment over this time period.

What more might be done by governments, therefore, to detect and prevent dependent self-employment? Given that a major driving force appears to be employers seeking financial gain, one option would be to ensure that the costs of misclassifying workers outweigh the benefits. To increase the costs, governments could therefore more widely increase the sanctions and/or the risks of detection. Sanctions for misclassification might range from requalification of the employment relationship into the proper contractual relations, through to criminal sanctions, with various civil and economic sanctions in between. Identifying such violations, however, remains difficult, not least because employees fear dismissal if they whistle-blow, lack appropriate information on their rights, the time and costs involved are considerable, and there is uncertainty over the outcome of taking this kind of action before administrative or judicial authorities.

Besides increasing the perceived and/or actual costs to employers of misclassifying workers so that they outweigh the perceived benefits, a further initiative would be to reduce the benefits of employing workers as dependent self-employed. This might involve equalising the financial costs of employers using dependent employment compared with outsourcing to the self-employed, as has been recently implemented in Romania (Williams and Horodnic, 2017) and proposed in the UK (Taylor, 2017). Another option would be to make it easier for employers to put their affairs in order. In the Italian labour market reform approved in 2015 (Decree No. 81/2015), an amnesty was introduced regarding possible fines and compensation if the employer transformed an existing self-employed contract (including those suspected as being dependent self-employment) into an open-ended subordinate employment contract by the end of 2015 (Eurofound, 2016). This could be introduced in other countries and coupled with an awareness raising campaign targeted at employers and workers about the benefits of the standard employment relationship and the costs of dependent self-employment. Until now, however, little research has been conducted on what is effective and what is not when tackling dependent self-employment.

However, and given the decline of the standard employment relationship, it is a strategy of extending employment rights (all or some) beyond dependent employees to all self-employed that is perhaps more required, rather than focus upon integrating purely the dependent self-employed. In other words, rather than attempt to make dependent self-employment a type of standard employment relationship, and in doing so attach labour rights, the strategy should be perhaps to make *all work decent, including self-employment* (ILO, 2016).

Despite the advances made to understanding the prevalence and distribution of dependent self-employment in this article, there are nevertheless limitations to the conclusions that can be drawn, and caveats required. Firstly, these findings regarding its prevalence only relate to the 2010 to 2015 period. Understanding the longer-term trends would be useful. No known datasets, however, are available to do so. Secondly, although this survey uncovers who engages in dependent self-employment

in the EU28, further surveys, including sector-specific studies, would help develop a fuller and better understanding of who engages in dependent self-employment. Thirdly, there is also a need to complement the quantitative research in this article with a more nuanced in-depth qualitative understanding of employers' and workers' attitudes and motives for engaging in dependent self-employment, akin to the study by Cruz *et al.* (2017) on the stripping industry. Unless there is a better understanding of attitudes and motives (e.g. whether this is purely a monetary cost/benefit calculation by employers, whether it is a constrained choice or necessity for workers), and the motivational drivers and attitudes understood, then policies cannot be developed to tackle this phenomenon. Fourth and finally, there is need to evaluate different policy approaches and measures, and the various combinations of measures, in terms of their effectiveness in tackling dependent self-employment.

In sum, this article has revealed the need to transcend the dominant depiction of this work as an ever more prevalent employment relationship. So too has it raised some surprising findings about the sectors in which it is concentrated. If this article therefore encourages further research to develop a better understanding of its prevalence and distribution in lived practice, then it will have fulfilled one of its intentions. If it also leads to greater evaluation of the policy approaches and measures required, then it will have fulfilled its wider intention.

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## APPENDIX

*Table A1: Variables used in the analysis*

Variable	Description	Mode (%)
<i>Dependent variable</i>		
Dependent self-employed	0 = No; 1 = Yes	No (96%)
<i>Independent variables</i>		
Gender	0 = Female; 1 = Male	Male (51%)
Age	1 = 15–24 years old; 2 = 25–39 years old; 3 = 40–54 years old; 4 = 55+ years old	40–54 years old (40%)
Respondent and both parents born in the country of residence	0 = No; 1 = Yes	Yes (87%)
Household size	0 = 1 person; 2 = 2 persons or more	2 persons or more (86%)
Household ability to make ends meet	0 = Easily; 2 = With difficulty	Easily (65%)
Sector	1 = The private sector; 2 = The public sector; 3 = A joint private–public	The private sector (71%)

(Continues)

Table A1. (Continued)

Variable	Description	Mode (%)
Economic activities, NACE rev. 2	organisation/company; 4 = The not-for-profit sector or an NGO/ Other 1 = Transportation and storage; 2 = Agriculture, forestry and fishing; 3 = Industry (except construction); 4 = Construction; 5 = Wholesale and retail trade; repair of motors; 6 = Accommodation and food service activities; 7 = Information and communication; 8 = Financial and insurance/ real estate activities; 9 = Professional, scientific + administrative activities; 10 = Public administration, Education, Human health and social work; 11 = Arts, entertainment, recreation and other service activities; 12 = Activities of households as employers	Public administration, Education, Human health and social work (26%)
Country	1 = Austria; 2 = Belgium; 3 = Bulgaria; 4 = Croatia; 5 = Cyprus; 6 = Czech Republic; 7 = Denmark; 8 = Estonia; 9 = Finland; 10 = France; 11 = Germany; 12 = Greece; 13 = Hungary; 14 = Ireland; 15 = Italy; 16 = Latvia; 17 = Lithuania; 18 = Luxembourg; 19 = Malta; 20 = Netherlands; 21 = Poland; 22 = Portugal; 23 = Romania; 24 = Slovakia; 25 = Slovenia; 26 = Spain; 27 = Sweden; 28 = United Kingdom	Germany (18%)

Note: Not imputed data

Source: EWCS (2015); own calculations.