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Dependent self-employed individuals: Are they different from paid employees?

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Dependent self-employed individuals: Are they different from paid employees?

Abstract

Purpose: This study focuses on dependent self-employment, which covers a situation where a person works for the same employer as a typical worker while on a self-employment contractual basis, i.e., without a traditional employment contract and without certain rights granted to "regular" employees.

Design/methodology/approach: The research exploits the individual-level dataset of 35 European countries extracted from the 2017 edition of the European Labour Force Survey and compares the characteristics of employees and dependent self-employed individuals. Methodologically, the study relies on the estimation of a multivariate logistic regression model.

Findings: The main hypothesis assuming that dependent self-employed work most often in low-skilled occupations was empirically supported. There was also a non-linear (u-shaped) relationship between the years of accumulated experience (with a turning point at 35 years) and the likelihood of being dependent self-employed. Other results showed that dependent self-employed are less likely to be women, and they are more likely born outside of the countries where they participate in the labour markets.

Originality/value: The study contributes to the field by adopting a comparable definition of dependent self-employment and exploiting the recent theoretical support of The Work Precarity Framework. The phenomenon should still be addressed by policymakers and labour office representatives, aiming to protect, primarily, vulnerable lower-skilled workers. The ongoing research should study the longitudinal dimension of dependent self-employment with a focus on motivational aspects.

Keywords: dependent self-employment; heterogeneity of entrepreneurs; bogus, fake, false, sham, pseudo or involuntary self-employed

JEL codes: L26; J21; H55



1. Introduction

Given the proliferation of technological change and the appearance of new forms of employment, relations in the labour market have been altered fundamentally, including the complexity of self-employment. Growing attention is paid to the different forms of self-employment, which on the one hand, may be perceived as a way to circumvent labour regulations (Sargeant, 2017; Baker et al., 2018; MacDonald and Giazitzoglu, 2019), described as precarious work, with less stability, higher risk and uncertain income (Putniņš and Sauka, 2011; Aldén and Hammarstedt, 2016; Moore and Newsome, 2018; Conen and Schippers, 2019; Hernanz and Carrasco, 2021; Heyes and Tomlinson, 2021; Kitschelt and Rehm, 2022) but on the other hand, a way how to allow individuals to strive for more independence and freedom (Rustagi, 2013; Allen and Curington, 2014; Hagqvist et al., 2015; Murgia and Pulignano, 2021). Another perspective highlights the importance of self-employed persons working as freelancers, their role in enabling entrepreneurial attitudes (van Stel and de Vries, 2015; Burke et al., 2019) and their impact on the productivity and efficiency of other organisations (Popiel, 2017; Bologna, 2018; Drahokoupil and Fabo, 2019; Pichault and McKeown, 2019).

A burgeoning research stream focuses on motives, which explain why people choose self-employment as their career choice. In general, the push and pull factors are mentioned, which suggest two opposite drivers of becoming self-employed (Segal et al., 2005; Murnieks et al., 2020). Extensive research by Burke (2011; 2015) documents the variety among the self-employed labour force, which cover both less skilled vulnerable workers and well-educated, highly skilled professionals and freelancers. Similarly, Bögenhold and Klinglmair (2016, p.844) note in their study that: "the category of self-employment includes very privileged positions as well as very marginal ones, coexisting in the same category at the same time". Other scholars (Bögenhold, 2019; van Stel and van der Zwan, 2019; Dvouletý, 2020; Van Stel et al., 2021) also confirm the heterogeneous nature of self-employed individuals regarding income level, occupation, education, dependency and security level.

Based on these observations, some recent studies (Skrzek-Lubasińska and Szaban, 2019; Cieślik and Dvouletý, 2019) attempted to capture the diverse nature of people classified as self-employed into such categories as job creators, solo self-employed professionals and freelancers, dependent (also associated with several normative connotations and terms like fake, false, bogus, or pseudo) self-employed, part-time or hybrid self-employed. Each of these categories must be clearly defined; otherwise, the scholarly discussion will not move further, and the contradictory arguments regarding solo self-employment will remain.

This study focuses on one of these identified categories of self-employment – dependent self-employment, which is associated with the most problematic labour market-related aspects (Behling and Harvey, 2015; Moore and Newsome, 2018; Horodnic and Williams, 2019a; 2019b; Millán et al., 2020). Dependent self-employment covers a situation where a person conducts the same tasks and works for the same employer as a typical worker while on a self-employment contractual basis, i.e., without a traditional employment contract and without certain rights granted to "regular" employees (Burke, 2011; Román et al., 2011; Thörnquist, 2015). Such a working relationship is being used in order to circumvent labour market

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3 regulations and for tax evasion purposes (Millán et al., 2018; Moore and Newsome, 2018; Koufopoulou et
4 al., 2019).

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6 Thus, it is not surprising that there is a significant interest of policymakers in this phenomenon related
7 to both monitoring and potential policy responses. The issue was noted several times, for example, in reports
8 of the European Parliament (Directorate General for Internal Policies), the International Labour
9 Organization (ILO) or the Organization for Economic Development and Coordination – OECD (OECD,
10 2000; Eichhorst et al., 2013; ILO, 2016) and the current policy debate is driven mainly by the neoliberal
11 approach towards public policymaking (Moisander et al., 2018). The 2015 statistics from the European
12 Working Conditions Survey (EWCS) show that 55% of self-employed without employees in Europe are
13 dependent on the main contractor and/or work without any authority (Williams and Horodnic, 2019, p.
14 73). However, these striking numbers were later calibrated in the Eurostat (2018) report on self-employment
15 in Europe, which included additional conditions required to find the accurate and statistically feasible
16 definition of dependent self-employment. Cieřlik and Dvouletý (2019, p. 299) summarise these conditions
17 as follows: individuals are called dependent self-employed if "they work full-time as solo self-employed for
18 one client only (or one client is dominating, i.e., generating 75% or more income) and a (dominating) client
19 decides their working hours". If we apply this definition, we see that the size of the issue is not that large,
20 as indicated by Williams and Horodnic (2019) or earlier by Williams and Lapeyre (2017), but still
21 considerable. Data from the 2017 European Labour Force Survey (EU LFS) show that only 5% of solo self-
22 employed are dependent (Eurostat, 2018; Cieřlik and Dvouletý, 2019).

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24 Therefore, this paper focuses on dependent workers as defined in Cieřlik and Dvouletý (2019, p.
25 299) and explores whether they systematically differ from paid employees. The need for a deeper
26 investigation of dependent self-employment drives the primary motivation for this research. Therefore, we
27 use the individual-level dataset of 35 European countries extracted from the 2017 edition of the LFS and
28 examine the determinants of dependent self-employment. Our methodological approach is based on
29 employing a rich range of socio-economic characteristics and estimation of a logistic regression model
30 determining the likelihood of being dependent self-employed. Unlike most previous studies, we pay
31 attention to the professional status of the labour force and find linkages between occupational characteristics
32 and the inclination to work as dependent self-employed. In this way, we provide a novel empirical
33 contribution to the knowledge on the characteristics and nature of this group of self-employed persons
34 based on the rich and vast cross-country dataset.

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36 The rest of the article is organised as follows. The next section reviews the existing studies dealing
37 with dependent self-employment and introduces the central tested hypothesis. This section is followed by
38 an introduction to the 2017 LFS dataset and a description of the analysed variables. Then we present findings
39 from the estimated logistic regression model, which we discuss in the article's final section, including
40 implications for future research and policymakers.



2. Background and hypothesis development

A good starting point for clarifying the relationship between employment, economic dependency and self-employment is a recent book edited by Williams and Horodnic (2019). Williams and Horodnic (2019) note that the previously published studies use different kinds of terms for capturing dependent self-employment. However, these often very normative terms, such as "bogus", "fake", "false", "sham", "involuntary", "misclassified", or "pseudo" self-employment (in German Scheinselbständigkeit, c. f. Behrmann, 2021) or "disguised" employment, tend to have almost identical meaning. In particular, these all terms describe a situation where a person conducts the same tasks and works for the same employer as a typical worker but on a self-employment contractual basis, i.e., without a traditional employment contract (Román et al., 2011; Wickham and Bobek, 2016; Adriaenssens and Hendrickx, 2019; Carrasco and Hernanz, 2021). We emphasise that to advance the existing research, the scholarly community needs to shift from using normative terminology to working only with the dependent self-employment term as a unified term used in this study from now on. The previous wordings were mentioned explicitly to illustrate how diverse is the existing work on the economic dependency of self-employed. In addition, we clarify that by a traditional employment contract, we mean a legally acceptable document signed by two parties, (potential) employee and employer, for a definite or indefinite period, determining the employment relationship, work-related duties and wage or salary paid to an employee (Simon, 1951; Ojala et al., 2018).

Then we need to concentrate on the working definition of dependent self-employment. According to the European Foundation for the Improvement of Living and Working Conditions – Eurofound (2017), in most cases, the dependent forms of self-employment are distinguished based on three criteria: (1) working for only one client, (2) having authority to hire staff, (3) having the authority to make important strategic decisions (Eurofound, 2017). This initial definition was later calibrated by Eurostat and summarised in a study by Ciešlik and Dvouletý (2019, p. 299), noting that it is crucial to combine one client (or dominant client) condition with the decision on working hours to capture the most endangered solo self-employed. In other words, to statistically cover those whom the employer pushes to work under a self-employment contract (Nikulin, 2021).

Consequently, dependent self-employment implies a disguised employment relationship. It is argued that false self-employment is, therefore, a misuse of genuine self-employment relationship and is motivated by the desire of the employer to avoid taxes, collective agreements or other legal responsibilities, having thus precarious character (Thörnquist, 2011; 2015; Wagner and Berntsen, 2016; Heyes and Hastings, 2017; Allan et al., 2021), and it makes self-employed to bear the risks of work and receive limited social benefits (e.g., holiday/sickness pay) and statutory entitlements (Kalleberg and Vallas, 2017, p. 1). Besides, they may also experience fear and uncertainty regarding the continuity of their working and social relationships (Allan et al., 2021). The main channels through which the precarity may be observed are personal dependence if the main (only) contractor regulates the time, place and organisation of work (Muehlberger, 2007b) as well as economic dependence, where the costs and risk are transferred from

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3 the customer to the self-employed (Thörnquist, 2015). That is why these falsely classified self-employed
4 often do not carry out entrepreneurial activities but perform tasks ordered by a customer at a designated
5 place and time (Eichhorst et al., 2013; Thörnquist, 2015; Gialis et al., 2017).
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8 Still, it needs to be acknowledged that the type of working contract is a result of mutual agreement
9 between employer and future (dependent) self-employed, despite that the bargaining powers of each of the
10 sides are not equal and depend on several factors (Pulignano, 2017; Horodnic and Williams, 2019a). As
11 described by the economic theory of the labour market (Chiang, 1986; Kugler and Saint-Paul, 2004; Foss et
12 al., 2007), the business owners and their managers (employers) aim to minimise the personnel costs, thus
13 candidates willing to work as dependent self-employed, while delivering the same level of work as staffed
14 employees, will be preferred. Industrial and organisational psychology scholars (Duffy et al., 2016; Kim et
15 al., 2019) use the psychology of working theory (PWT) to describe factors that explain work choices and
16 hiring decisions. Allan et al. (2021) recently derived from PWT The Work Precarity Framework, which also
17 includes factors that moderate precarious working relationships. The following potential moderators are
18 included in the developed framework: work volition; resources and capital; social support; and social
19 class (Allan et al., 2021, p. 5) and may serve as predictors of dependent self-employment. Notably, not only
20 individual characteristics but also the economic and social conditions, employment protection legislation
21 and industry-specific factors influence the proportions of dependent self-employed. These structural factors
22 also include levels of labour market flexibilisation, privatisation and the concentration of economic power
23 in global value chains (Muehlberger, 2007a, Román et al., 2011; Eichhorst et al., 2013; Moisander et al.,
24 2018; Williams and Horodnic, 2019; Wright et al., 2019).
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35 However, the empirical findings on the role of these factors are relatively scarce currently as the
36 data availability is considerably limited. Up to date, most extensively, the authors worked with the EWCS
37 survey data. An analysis by Williams and Horodnic (2018) based on the 2015 edition of the EWCS revealed
38 that predominantly, men, older workers and those employed in the private sector have a greater probability
39 of working as dependent self-employed. The authors also observed considerable variations across sectors:
40 the highest share of dependent self-employed was observed in agriculture, forestry and fishing (22%), arts,
41 entertainment, recreation and other service activities (14%) and professional, scientific and administrative
42 workers, where the proportion was 11% (Williams and Horodnic, 2018). When analysing the inclinations to
43 dependent self-employment by occupations with both available waves of EWCS (i.e., 2010 and 2015 data),
44 Williams and Horodnic (2019) found that managers are less likely to be dependent self-employed in
45 comparison to skilled agricultural, forestry and fishing workers, but more likely when compared to clerical
46 support workers. However, the authors failed to empirically support a hypothesis assuming that lower-
47 skilled occupations are more likely to be associated with dependent self-employment (Williams and
48 Horodnic, 2019). The most recent study by Kösters and Smits (2021) was based on Dutch LFS data, and
49 the conducted analysis also failed to support this assumption. These results are contradictory to the earlier
50 established findings of Muehlberger (2007a), Fehringer (2014) or Thörnquist (2015), arguing in favour of
51 this relationship. Thus, it is an interesting research question to see whether the established patterns and
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3 theoretical expectations of PWT changed or were only time- and/or context-specific (Eichhorst et al., 2013;
4 Carrasco and Hernanz, 2021; Allan et al., 2021). Therefore, we particularly state the following hypothesis to
5 be verified:
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8 *H₁: Dependent self-employed individuals are more likely to work in low-skilled professions.*
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10 11 12 13 **3. Data** 14

15 The research is based on the 2017 edition of the European Union Labour Force Survey (EU LFS)
16 data. The EU LFS is a representative survey managed by the national statistical authorities of 35 countries¹.
17 Eurostat created the harmonised dataset, and the 2017 edition was already used by researchers studying self-
18 employment recently because it covers specific aspects of entrepreneurial behaviour (Dvouletý, 2020).
19 Details about the questionnaire, data collection and all variables can be accessed online at the Eurostat
20 website (Eurostat, 2018; 2019; 2020).
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25 We focus on the phenomenon of dependent self-employment, so we extract from the whole 2017
26 LFS dataset information about individuals who are full-time employees and add those who meet the
27 definition of dependent self-employment, as described by Cieřlik and Dvouletý (2019). Therefore, by
28 dependent self-employed individuals, we mean in our sample those: "*who work full-time as solo self-employed for*
29 *one client only (or one client is dominating, i.e., generating 75% or more income) and a (dominating) client decides their working*
30 *hours*" (Cieřlik and Dvouletý, 2019, p. 299). The final dataset includes information about 278,708
31 economically active persons aged between 15 and 64 years pursuing a single job. The number of
32 observations, however, varies depending on the availability of the remaining variables. The definitions of
33 included variables of interest are available in Table 1, and descriptive statistics of the sample can be found
34 in Table 2. Initially, we observe that the proportion of dependent self-employed individuals is relatively low;
35 they constitute only 0.3% of the whole sample. This proportion is lower than the official LFS statistics
36 because not all respondents have available data, and we focused our analysis only on full-time employed and
37 self-employed individuals. The proportions differ across studied countries (see Appendix 1), but the variance
38 seems to be relatively stable, not indicating any extremes. The highest proportions are observed in
39 Romania (0.9%) and Italy (0.8%) and the lowest in Switzerland (0.04%) and Finland (0.04%). The analysed
40 characteristics of individuals (see Table 1) include traditional determinants of labour market participation
41 (Jenkins et al., 2003; Cipollone et al., 2014) and self-employment engagement (Cowling et al., 2019; Van Stel
42 et al., 2021), particularly respondent's age, gender, nationality, education, years of experience, marital status,
43 partner, household and children-related characteristics, and degree of urbanisation of the area of living.
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¹ The 2017 LFS covers Austria, Belgium, Bulgaria, Switzerland, Cyprus, Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France, Greece, Croatia, Hungary, Ireland, Iceland, Italy, Lithuania, Luxembourg, Latvia, Malta, Netherlands, Norway, Poland, Portugal, Romania, Sweden, Slovenia, and the United Kingdom.

Table 1. List of variables

Variable	Definition
<i>Dependent Self-employment</i>	Variable equals one if the respondent works full-time as a solo self-employed and works for one client only (or one is dominating, i.e., generating 75% or more income) and a (dominating) client decides his/her working hours.
<i>Age</i>	Respondent's age, classified into several age categories, reflecting a range between 15 and 64 years, coded as a set of dummy variables.
<i>Female</i>	Variable coded as one if the respondent's gender is a female.
<i>Nationality non-Native</i>	Variable equals one if the respondent holds a different nationality than the native.
<i>Education</i>	Set of dummy variables according to ISCED (International Standard Classification of Education, 2011) 2011 classification.
<i>Skill-level Classification of Professions</i>	Set of dummy variables according to ISCO (International Standard Classification of Occupations, International Labour Organization, 2008) 0-8 classification of professions based on the skill levels grouped into four ILO categories, i.e., low, medium and high-skilled professions (without managerial professions) and managers (highest level).
<i>Years of Experience</i>	Respondent's accumulated years of experience in the current company or organisation.
<i>Marital Status</i>	Set of dummy variables according to respondent's marital status: widowed, divorced or legally separated; single or married.
<i>Partner/spouse living in the same household</i>	Dummy variable, which equals 1 if the respondent lives together with his/her spouse/partner.
<i>Number of persons in the Household</i>	A variable that reflects the number of persons living in respondent's household.
<i>Number of children in the household aged less than 15 years</i>	A variable that reflects the number of children under 15 years old in respondent's household.
<i>Degree of Urbanisation</i>	A set of dummy variables describing whether the respondent lives in cities; towns and suburbs; or in rural area.
<i>Country</i>	Respondent's country of residence.

Own calculations based on the Labour Force Survey (LFS) ad-hoc module 2017 data (Eurostat, 2018)

Table 2: Descriptive statistics (Dependent self-employed and wage employed, 15-64 years)

Variable	Frequency (%)	N			
<i>Dependent self-employed (=1)</i>	0.3	326,330			
<i>15-19 years of age (=1)</i>	1.5	326,330			
<i>20-24 years of age (=1)</i>	6.7	326,330			
<i>25-29 years of age (=1)</i>	11.7	326,330			
<i>30-34 years of age (=1)</i>	12.5	326,330			
<i>35-39 years of age (=1)</i>	12.9	326,330			
<i>40-44 years of age (=1)</i>	13.1	326,330			
<i>45-49 years of age (=1)</i>	13.3	326,330			
<i>50-54 years of age (=1)</i>	12.9	326,330			
<i>55-59 years of age (=1)</i>	10.3	326,330			
<i>60-64 years of age (=1)</i>	5.0	326,330			
<i>Female (=1)</i>	40.9	326,330			
<i>Nationality non-Native (=1)</i>	8.1	326,082			
<i>Less than Primary Education (=1)</i>	0.4	325,177			
<i>Primary Education (=1)</i>	2.1	325,177			
<i>Lower Secondary Education (=1)</i>	13.3	325,177			
<i>Upper Secondary Education (=1)</i>	43.8	325,177			
<i>Post-secondary Non-tertiary Education (=1)</i>	3.7	325,177			
<i>Short-cycle Tertiary Education (=1)</i>	6.2	325,177			
<i>Bachelor's or Equivalent Level (=1)</i>	13.9	325,177			
<i>Master's or Equivalent Level (=1)</i>	15.5	325,177			
<i>Doctoral or Equivalent Level (=1)</i>	1.2	325,177			
<i>Low-skilled Professions (=1)</i>	7.6	325,481			
<i>Medium-skilled Professions (=1)</i>	47.6	325,481			
<i>High-skilled Professions without Managers (=1)</i>	38.6	325,481			
<i>High-skilled Professions - Managers (=1)</i>	6.2	325,481			
<i>Widowed, divorced or legally separated (=1)</i>	9.0	326,191			
<i>Single (=1)</i>	39.0	326,191			
<i>Married (=1)</i>	52.0	326,191			
<i>Partner/ spouse living in the same household (=1)</i>	65.6	278,708			
<i>Cities (Densely populated area) (=1)</i>	42.5	326,330			
<i>Towns and suburbs (Intermediate populated area) (=1)</i>	33.6	326,330			
<i>Rural (Thinly populated area) (=1)</i>	23.9	326,330			
Variable	Mean	SD	Min	Max	N
<i>Years of Experience</i>	10.5	10.1	0	50	326,330
<i>Number of persons in the Household</i>	3.0	1.3	1	17	278,708
<i>Number of children in the household aged less than 15 years</i>	0.5	0.8	0	10	278,708

Note: Post-stratification weights applied.

Own elaboration based on the Labour Force Survey (LFS) ad-hoc module 2017 data (Eurostat, 2018)

4. Analysis and results

Our analysis aims to explore whether dependent self-employed persons systematically differ from paid employees, with a particular focus on an individual's professional status. To achieve our research goal, we estimate a multivariate logistic regression model with the dependent variable capturing dependent self-employment status. The econometric model is estimated on a sample of full-time employees (dependent variable = 0) and dependent self-employed only (dependent variable = 1). We present the obtained results in Table 3. The standard errors of the estimated coefficients are robust, and reported estimates were also adjusted for the relative size of the labour force of the included 35 countries. The econometric model also includes a series of country dummies, which were found to be statistically significant. However, they are not reported for parsimonious reasons. According to the Chi-square test of joint significance, the model was found to be statistically significant (Menard, 2001). Therefore, there are statistically significant variables which differentiate dependent self-employed persons from paid employees.

We find that dependent self-employment occurs less likely among women, but it does not seem to be associated with age. Interestingly, dependent self-employed are more likely to be born outside of the countries where they participate in the labour markets. Furthermore, the obtained results do not imply any relationship with the level of education. However, we observe a statistically significant association with the skill levels of professions and a non-linear (u-shaped) relationship with the years of accumulated experience (with a turning point at 35 years). The higher the skill level of a profession is, the lower the probability of being dependent self-employed. Thus, the lowest propensity is according to the obtained estimates for managerial professions, while the highest is for low-skilled occupations. Such a finding is in line with the stated hypothesis, which is, thus, based on our research sample empirically supported. Our results indicate a positive association between the number of persons living in the household and the likelihood of being dependent self-employed. However, the remaining family-related variables were not found to be statistically significant.



Table 3. Determinants of dependent self-employment

Independent variables/*Dependent Self-employment = 1* (i.e., works full-time as solo self-employed and working for one client only (or one is dominating, i.e., generating 75% or more income) and a (dominating) client decides his/her working hours)

<i>20-24 years of age</i>	-0.227 (0.411)
<i>25-29 years of age</i>	0.492 (0.403)
<i>30-34 years of age</i>	0.111 (0.411)
<i>35-39 years of age</i>	0.460 (0.409)
<i>40-44 years of age</i>	0.564 (0.419)
<i>45-49 years of age</i>	0.325 (0.419)
<i>50-54 years of age</i>	0.594 (0.420)
<i>55-59 years of age</i>	0.356 (0.431)
<i>60-64 years of age</i>	0.951* (0.438)
<i>Female</i>	-0.747*** (0.104)
<i>Nationality non-Native</i>	0.522*** (0.148)
<i>Primary Education</i>	-0.149 (0.545)
<i>Lower Secondary Education</i>	0.0465 (0.492)
<i>Upper Secondary Education</i>	-0.0756 (0.491)
<i>Post-secondary Non-tertiary Education</i>	0.937 (0.600)
<i>Short-cycle Tertiary Education</i>	-0.238 (0.527)
<i>Bachelor's or Equivalent Level</i>	-0.251 (0.519)
<i>Master's or Equivalent Level</i>	0.170 (0.528)
<i>Doctoral or Equivalent Level</i>	-0.0607 (0.678)
<i>Low-skilled Professions</i>	1.250*** (0.287)
<i>Medium-skilled Professions</i>	1.058*** (0.264)
<i>High-skilled Professions without Managers</i>	1.150*** (0.255)
<i>Years of Experience</i>	-0.0577*** (0.0140)
<i>Years of Experience Squared</i>	0.000835* (0.000402)
<i>Number of persons in the Household</i>	0.150*** (0.0302)
<i>Widowed, divorced or legally separated</i>	0.136 (0.175)
<i>Married</i>	-0.0919

	(0.180)
<i>Partner/spouse living in the same household</i>	-0.0832
	(0.140)
<i>Number of children in the household aged less than 15 years</i>	-0.0374
	(0.0632)
<i>Cities (Densely populated area)</i>	0.0173
	(0.102)
<i>Towns and suburbs (Intermediate density area)</i>	0.00426
	(0.122)
<i>Constant</i>	-7.752***
	(0.744)
Country dummies	Yes
Sample description	Full-time employees and dependent self-employed.
Observations	277,424
Prob > chi2	0.000
Pseudo R ²	0.082
Akaike information criterion (AIC)	6334.7
Bayesian information criterion (BIC)	6903.5

Notes: Robust logistic regression estimates. Pooled sample of LFS countries. Countries included: Austria, Belgium, Bulgaria, Switzerland, Cyprus, Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France, Greece, Croatia, Hungary, Ireland, Iceland, Italy, Lithuania, Luxembourg, Latvia, Malta, Netherlands, Norway, Poland, Portugal, Romania, Sweden, Slovenia, United Kingdom. Post-stratification weights applied. Robust standard errors are in parentheses, stat. significance is reported as follows: + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Turning point for *Years of Experience* and *Years of Experience Squared* \approx 35 years.

Reference groups for dummy variables: *Age (15-19 years)*; *Male*; *Native of own Country*; *Less than Primary Education*; *Managers*; *Single*; *Partner/spouse does not live in the same household*; *Rural area (Thinly populated area)*.

Source: STATA 14, own estimates based on the Labour Force Survey (LFS) ad-hoc module 2017 data (Eurostat, 2018)

5. Discussion and conclusions

This research contributed to the state of knowledge on dependent self-employment from the perspective of the 2017 European Labour Force Survey (EU LFS) individual-level data covering 35 countries. The multivariate analysis was used to determine whether dependent self-employed persons systematically differ from paid employees and whether dependent self-employment occurs more among the low-skilled professions. The obtained results from the estimated logistic regression model showed that the highest probability of being dependent self-employed was for the low-skilled occupations, thus favouring the stated hypothesis. Put together with the non-linear u-shaped relationship with the years of accumulated experience (with a turning point at 35 years), we document the importance of an individual's resources and capital as a part of the newly established Work Precarity Framework by Allan et al. (2021). In line with the psychology of working theory – PWT (Duffy et al., 2016), we see that people working in low-skilled occupations and, in addition, those being inexperienced (or "over experienced") face much more difficult situations when negotiating their work conditions, often ending in the dependent self-employment contract. Eichhorst et al. (2013) add that given the lower levels of experience and skills, the individuals lack the capacity to negotiate better conditions with their employers. Thus, being dependent self-employed goes hand in hand with higher levels of precarity, including lower social protection, work security and increased uncertainty (Thörnquist, 2015; Wagner and Berntsen, 2016). These observations align with the earlier research on dependent self-employment (Muehlberger, 2007a; Böheim and Muehlberger, 2009; Fehringer,

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3 2014), highlighting its push character and increased volatility of persons working under these conditions.
4 The push (necessity) aspect of dependent self-employed seems to be also more pronounced for individuals
5 born outside of the country they work, who might find it even more challenging to secure an income and
6 are willing to accept even worse working and financial conditions (Allan et al., 2021) as assumed earlier by
7 Williams and Horodnic (2018) but not empirically validated. The gender dimension of dependent self-
8 employment is relatively consistent over past studies, indicating that males are more inclined to opt for it.
9 As emphasised earlier, given the low-skilled profile, the dependent self-employed males often work in
10 manual jobs in construction or manufacturing industries (Eichhorst et al., 2013; Williams and Horodnic,
11 2018; Kösters and Smits, 2021).

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18 The contribution of this study to the current state of the art is in the adoption of the unified
19 definition of dependent self-employment and in the theoretical underpinning of the phenomenon in The
20 Work Precarity Framework, which should also be used in ongoing research to maintain comparability of
21 future studies. The current state of knowledge on dependent self-employment, might be only moved
22 forward by using the same terms, i.e., dependent self-employment, and by following the working definitions
23 of the phenomenon, ensuring analytical rigour and comparability of (future) research findings. Otherwise,
24 we agree with the previous researchers on the problematic aspects of dependent self-employment, which
25 should be treated separately from the population of self-employed persons. However, the provided
26 empirical findings are based on a cross-country sample and, thus, validate the previously obtained evidence
27 also from the international (European) perspective, as the previous findings were driven mostly by single-
28 country studies. This also enhances the contribution of our research study. Being dependent self-employed
29 may represent only a temporary episode on the transition to long-term employment (Böheim and
30 Muehlberger, 2009); however, when considered a long-term job, the harmful effects could accumulate even
31 more and significantly influence mental and physical well-being (Allan et al., 2021). Therefore, policymakers
32 and labour market representatives must proceed in increasing awareness about the phenomenon. The role
33 of continuous onsite controls and regulatory enforcement leading to the mitigation of dependent self-
34 employment has been articulated many times by previous studies (Böheim and Muehlberger, 2009;
35 Thörnquist, 2015; Williams and Horodnic, 2018). It is vital to spread information about the potentially
36 harmful effects of dependent self-employment, for example, through the labour market office
37 representatives, who often interact with the unemployed or individuals at risk of unemployment.

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49 Nevertheless, policymakers also need to focus on the second aspect of the problem – employers
50 who consider offering dependent contracts to their employees or those who favour them. There is a need
51 to tighten the controlling mechanisms to decrease the number of dependent self-employed workers and
52 protect vulnerable persons, as recently emphasised by Kösters and Smits (2021). Researchers and scholars
could investigate to what extent country-level institutional, regulatory, and control mechanisms determine
the national levels of dependent self-employment (see Appendix 1) and their development over time as we
observe variation in the rates of dependent self-employment in our sample. Based on our summary statistics,
we suggest future research to test a hypothesis assuming a negative relationship between the quality of

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3 institutions and the rates of dependent self-employment. Finally, we need to acknowledge the cross-sectional
4 dimension of the study as a severe limitation, preventing us from tracking the employment transitions of
5 dependent self-employed, which could provide even more robust results regarding the duration of
6 dependent self-employment. In particular, it would be interesting to see whether the more significant
7 proportions of self-employed stay in dependency for shorter periods and how the proportions and duration
8 differ across the regions, for example, developed vs those underdeveloped. Primary research could also
9 focus on those individuals who work only part-time, as this study provided insights only from employed
10 and self-employed who work full-time. We call for more research on the multiple jobs holding
11 phenomenon (Boeri et al., 2020), asking if some dependent self-employed combine their primary job with
12 other occupations and how they cope with it. This includes individuals who combine their main paid job
13 with entrepreneurial activity, linked in the scholarly literature with the term hybrid entrepreneurs (Pollack et
14 al., 2019; Dvouletý and Bögenhold, 2022; Asante et al., 2022). Our research is also limited by the potential
15 biases caused by the self-declaring information from the respondents, even though the sample size is large
16 and the survey was distributed by professionals representing national statistical authorities. More research
17 is also needed to better capture the situations and motivations of individuals agreeing to become dependent
18 self-employed. As we studied the European (institutional and political) context of dependent self-
19 employment, future research could also more extensively address the parallels, including historical roots,
20 between dependent self-employment in the global and North and South, which was acknowledged by the
21 International Labour Organization (ILO) in its Home Work Convention C177 in 1996 (Borris and
22 Zimmermann, 2016). Another research area worth investigating in forthcoming studies is the role of
23 structural factors determining dependent self-employment, such as levels of labour market flexibilisation,
24 privatisation and the concentration of economic power in global value chains (Moisander et al., 2018). This
25 amplifies the need to better understand dependent self-employment across sectors and linkages with
26 particular occupations in horizontal and vertical ways. Such research could combine the neoliberal
27 policymaking framework and the individual Work Precarity Framework in the multilevel analysis.
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