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## **What's up with the self-employed? A Cross-National Perspective on the self-employed's Work-Related Mental Well-being.**

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### **Abstract**

Although many governments actively stimulate self-employment, their work-related mental well-being remains understudied. The aim of current study is to investigate the mental well-being of different types of self-employed, testing whether mental well-being differences among self-employed are explained by the presence of entrepreneurial characteristics that are in accordance with the ideal-typical image of the “successful entrepreneur” (e.g. creativity, willingness to take risks, innovativeness, high intrinsic motivation, skilfulness and the ability of recognizing opportunities) and the exposure to physical risks. Moreover, we investigate the relation of country-level “entrepreneurial climate” and the individual mental well-being of self-employed. For this purpose, data from the European Working Conditions Survey, round 6 (2015) was analysed, including 5,448 cases, originating from the 28 EU-member states. Multilevel random intercepts modelling was used to investigate associations of both individual- and country-level characteristics with mental well-being. We found that motivation, the ability to recognize opportunities, being overskilled, finding it easy to be self-employed and safety from physical risks positively influences the mental well-being of self-employed. Respondents with these characteristics are often medium-big employers, while farmers, dependent freelancers and own account workers generally have less of these features and tend to have lower levels of mental well-being. At the country-level, the proxy-variables for the entrepreneurial ecosystems were unable to explain the mental well-being differences on the individual level. These results implicate that policies promoting self-employment should be (more) concerned with the entrepreneurial characteristics of (future) self-employed.

**Keywords:** self-employment; mental well-being; cross-national; entrepreneurial characteristics; entrepreneurial ecosystems; EU 28

## 1. Introduction

Governments worldwide are trying to stimulate self-employment. The EU2020 employment strategy is illustrative in that regard: it recognises entrepreneurship and self-employment as key for achieving smart, sustainable and inclusive growth and as a way to create new jobs (European Commission, 2017). Many European countries are translating the European Commissions' strategy into their policies to promote self-employment. In 2015, between 6.1 (Luxembourg) and 35.2 (Greece) percent of EU-countries' labour force was self-employed (OECD, 2017). In some EU-countries – e.g. The Netherlands – entrepreneurship policies may have some effect, considering recent increases in the proportion of self-employed. Notwithstanding the policy attention and the fact that self-employed constitute an important minority in the labour force, research on work-related (mental) health of self-employed is very scarce – certainly when compared to employees (Toivanen, Griep, Mellner, Vinberg, & Eloranta, 2016). Even fewer studies have adopted a cross-national perspective to this study domain – see e.g. Johansson Sevä et al. (2016) for a notable exception.

The current study aims to investigate variation in mental health between types of self-employed residing in 28 European countries, using data from EUROFOUND's 2015 European Working Conditions Survey (EWCS). Moreover, we will test whether the presence of entrepreneurial characteristics typically attributed to successful self-employment – e.g. creativity, willingness to take risks, innovativeness, high intrinsic motivation, skilfulness and the ability of recognizing opportunities (Gartner, 1990; Hendry, 2004) – are helping to explain mental health differences among self-employed. We will investigate the influence of physical risk exposure as well. Finally, we will also examine whether country-level “entrepreneurial climate” (Audretsch & Keilbach, 2004) explains country-level variation in the mental well-being of self-employed.

### **1.1. Defining the self-employed**

For the theoretical background of a self-employment classification, we were confronted with the limited capacities of existing labor market typologies. In waged workers, there is a long sociological tradition in creating labor market typologies or occupational classifications. Empirical typologies, such as the well-known ISCO (International Labour Organization, 2010), are at least implicitly based on theoretical underpinnings assuming that the relation towards “capital” (owner, manager, worker), skill and type of economic activity are key constituting features (Crompton, 1998). An explicitly theoretical example, is the class typology by Wright (1997). However, our self-employment classification captures more variety.

According to Eurofound (2010), characteristics to identify and classify self-employed are: the absence of a wage-labour-relation (at least formally); a certain degree of economic and organisational independency; and working alone or having employees. This is in line with recommendations of Pärnänen and Sutela (2016). The self-employment classification, used in this research, is a reduced version of a self-employment classification with more categories (9). In the extended classification, freelancers, subcontractors and own account workers are separate groups. In the reduced version, these two groups are taken together under “dependent freelancers” or “independent freelancers” because they have similar vulnerability for becoming economically dependent self-employed. The final 7-category classification based on a consensus model developed for EUROFOUND distinguishes between (1) medium-to-big employers, (2) small employers, (3) independent freelancers, (4) dependent freelancers, (5) liberal professions, (6) farmers, no employer and (7) others (Anonymous, 2017) – this classification is further discussed in the methods section.

## **1.2. The mental well-being of self-employed**

Self-employed experience more autonomy, self-determination and freedom in their job (Nordenmark, Vinberg, & Strandh, 2012; Stephan & Roesler, 2010). In general, they appear to be more motivated and engaged with their work (Dijkhuizen, Gorgievski, van Veldhoven, & Schalk, 2016), which could be the reason for findings of higher job satisfaction (Binder & Coad, 2013; Meager, 2015), life satisfaction (Andersson, 2008) and mental well-being (Crum & Chen, 2015; Stephan & Roesler, 2010), compared to other groups of workers.

Other studies however, show that better (mental) health of self-employed is largely due to selection effects of healthy people into self-employment, while engaging in self-employment itself is not particularly beneficial for health (Rietveld, Van Kippersluis, & Thurik, 2015). High economic insecurity (Annink, Gorgievski, & Den Dulk, 2016), low support (Syrett, 2016), high workloads and long working hours (Hyytinen & Ruuskanen, 2007; Nordenmark et al., 2012) may have negative consequences for the mental well-being of self-employed. A too strong work-commitment may also lead to insufficient effort into other domains of life, affecting mental well-being negatively (Binder & Coad, 2013).

Of course, general comparisons of the self-employed versus other types of workers are highly misleading. Research into differences in mental health and their determinants *among* self-employed is crucial in order to get a deeper understanding of the work-related drivers of their mental well-being (Dijkhuizen et al., 2016). Previous

research shows that freelancers are a more problematic group in terms of working conditions and mental well-being, because of over-commitment (Syrett, 2016) and the related phenomenon of Effort-Reward-Imbalance (Ertel, Pech, Ullsperger, Von Dem Knesebeck, & Siegrist, 2005). Often freelancers experience low autonomy, economic dependence and financial hardship (Böheim & Mühlberger, 2006). Farmers, on the other hand, have the highest suicide rate in comparison to any other occupational group in the UK (Gregoire, 2002; Hounsome, Edwards, Hounsome, & Edwards-Jones, 2012). Farmers often have unpredictable and long working hours, experience financial insecurity, and lack basic social contact and social support (Gregoire, 2002). Regarding small-to-medium enterprise owners or managers (SME managers), Cocker et al. (2013) found that around one third of the SME-managers mentioned feelings of serious psychological stress. Shepherd et al. (2010) relate burnout in this population to role conflicts and role overloads. In contrast, larger business owners and those in the liberal professions appear to have fluent access to financial support, information, and social contact with people of the same occupational status (Sorgner & Fritsch, 2013). Larger business owners have often been self-employed for a large period of time, which results in more experience and a more stable business and workforce (Bradley & Roberts, 2004). All the previous studies discuss the work characteristics from a specific form of self-employment separately. However, drawing on these studies, we can make the following assumption for our study, in which we compare different forms of self-employment on poor mental well-being.

**Hypothesis 1.** Freelancers and own account workers, farmers and small business owners have worse mental well-being, compared to medium-to-large employers and liberal professions.

### **1.3 . The role of entrepreneurial characteristics**

Being self-employed or ‘entrepreneurship’ has become a strong ideological frame, shaping behavior. Peters (2001) explains this through the notion of ‘the enterprising self’, referring to the heroic depiction of the entrepreneur, with all sorts of attractive characteristics, presumably leading to personal and professional success (Anderson & Warren, 2011). According to entrepreneurial discourse, key characteristics of an ideal and successful “entrepreneur” are creativity, willingness to take risks, innovativeness, high intrinsic motivation, skilfulness and the ability of recognising opportunities (Anderson & Warren, 2011; Gartner, 1990; Hendry, 2004). According to critics, pursuing the entrepreneurial characteristics traps people in a new highly ideological ideal of neoliberalism (Boltanski & Chiapello, 2005), of which it can be questioned to what extent “entrepreneurship” actually leads to

personal and professional success. It can certainly be assumed, that different types of self-employed meet up to the ideal identity of the entrepreneur to different extents. One could even argue that those self-employed who are lacking the above described characteristics central to “ideal typical entrepreneur”, find themselves in a situation of “role inconsistency”, which could be harmful for mental health (Mirowsky & Ross, 1986). Therefore, in this study we will test whether characteristics embedded in the entrepreneurial discourse are able to explain mental well-being differences between types of self-employed.

Further, we might assume an influence of exposure to physical risks on differences in mental well-being between self-employed. Research indicates that physical work-related injuries are highly unreported, but that they strongly relate to the mental well-being of employees and self-employed (Chung & Cheng, 2017). These work-related risks are further distributed unevenly among the self-employed, which could explain differences in their mental well-being (Chung & Cheng, 2017). We can assume that the exposure to physical risks is especially high among self-employed farmers. Self-employed farmers tend to work with old equipment and are more prone to taking risks due to financial pressure (Solomon, 2002). The exposure to physical risks is influential in the mental well-being of self-employed farmers because the impact of such risks can have considerable consequence for their livelihoods, and the survival of their business (Gregoire, 2002).

**Hypothesis 2. (a)** A lack of entrepreneurial characteristics, and a high exposure to physical risks is related to lower mental well-being scores; and **(b)** entrepreneurial characteristics and physical risk exposure mediate the relationship between types of self-employed and mental well-being.

#### **1.4. The entrepreneurial climate**

The experiences of self-employment are also shaped by the entrepreneurial climate of a country, including legal, institutional, material and cultural factors (Audretsch & Keilbach, 2004). Such factors are also able to explain the mental well-being of the self-employed, as is argued in Spigel's (2017) theory of “entrepreneurial ecosystems”. These ecosystems are sets of conditions in the cultural, social and material context that co-determine the conditions under which self-employed have to operate (Spigel, 2017). If these conditions are beneficial, and make it easier for the entrepreneur to operate, entrepreneurs are expected to have higher mental well-being. Cultural conditions refer to beliefs and outlooks about entrepreneurship within a country. Positive or negative stories about entrepreneurship, as presented by the position and prestige in society of self-employed, can legitimize

entrepreneurs' status or not (Shane, 2003; Spigel, 2017). The social conditions refer to the social network in one's region, and more importantly the resources the entrepreneur can acquire from this network, such as investment capital. Lastly, the material conditions refer to four specific aspects, which are, universities, support services and facilities, policy and governance, and open markets (Spigel, 2017). For example, looking at the number of startups in a particular context can give an impression of the institutional friendliness in becoming self-employed. When the number of start-ups is high, it is expected that the institutional context for people to become self-employed is easy and open, when the number of start-ups is low, it is expected that institutional barriers might exist for people to become self-employed. This is but one example of how the life of self-employed may be influenced by the surrounding context of their businesses (Aldrich, 1992). In this paper, we will study the well-being effects of the cultural, social and material environment for the self-employed, using proxies for country-level indicators. Research on macro-determinants in relation to the mental well-being of self-employed is scarce (Helliwell, 2003), however, through the above-mentioned theory, we were able to make the following assumptions.

**Hypothesis 3.** (a) There exists country variation in the mental well-being of self-employed; and (b) this variation can partly be explained by proxy-determinants representing a country's entrepreneurial ecosystem.

## 2. Methods

### **2.1. Data**

Data from the sixth wave (2015) of the EWCS were used. Detailed information on the population, sample and selection can be found in the technical report of the 6<sup>th</sup> wave of the EWCS (Eurofound, 2016). All respondents were residents of the country of interview and were aged 15 or more, except for Bulgaria, Spain and the UK, where respondents were included from the age of 16. Although, the EWCS targets all people who performed at least one hour of paid work in the week before the interview, in the current study only self-employed persons were included. The countries that were included in our research were the EU28 member states. This resulted in a total unweighted sample of 5,448 respondents. The country with the least amount of cases was Denmark (62 cases), while Spain had the highest amount of cases (577 cases). The overall mean age was around 49 years old, with the youngest respondent being 15 and the oldest respondent being 87 years old. Of this sample 39.2 percent was female.

## 2.2. Measures

### 2.2.1. Individual level

*Mental well-being* was operationalized by the World Health Organisation's WHO-5 Well-being index (Psychiatric Center North Zealand, 2017). A 0-5 ranged sum scale was created out of five items each consisting of a 6-point Likert scale (ranging from "All of the time" to "At no time"): "*I have felt cheerful and in good spirits*"; "... *calm and relaxed*"; "... *active and vigorous*"; "*I woke up feeling fresh and rested*"; and "*My daily life has been filled with things that interest me*" ( $\alpha$  0.882). High scores (5) represented poor mental well-being.

*Self-employment type* was constructed through combining three dimensions: self-perceived status in employment ("manager", "farmer", "freelancer or subcontractor", "liberal professions", "other"), magnitude of economic activity ("large or medium sized business owners" with >8 employees, "small employers" having 1-8 employees, "no employees") and economic independency ("very dependent", "dependent", "independent"). The formation of the self-employment type indicator emerged from a EUROFOUND-study (Anonymous, 2017) inspired by recommendations for mapping and understanding the self-employed from Pärnänen & Sutela (2016). An in-depth description of the indicator can be found in the reference-work. The final types of self-employed were: manager (medium to big employer); manager (small employer); independent freelancer; dependent freelancer; farmer; liberal profession; and "other" (includes cases that were impossible to classify according to the above-mentioned criteria). In the Czech Republic, there were no respondents who corresponded to the farmer category.

*Entrepreneurial characteristics* were conceptualised using six proxies. Creativity, was operationalized based on the statement: "... *Solving unforeseen problems on your own?*" (yes or no). Innovativeness was operationalized based on the item: "... *Learning new things?*" (yes or no). Motivation, was composed of two items: "*At my work, I am enthusiastic about my job*" and "... *Time flies when I am working*". The resulting sum scale ( $\alpha$  0.570) was recoded on a 0-5-range, with 5 representing the highest level of poor motivation. Whether skills match between available and required skills was based on the item: "*Which of the following statements would best describe your skills in your own work?*". Respondents indicating: "*I need further training to cope well with my duties*", were classified as "underskilled", those indicating "*I have the skills to cope with more demanding duties*", were classified as "overskilled". Those indicating that their skills correspond well with their duties were used as the reference category. Recognising opportunities, was operationalized with the item: "... *able to apply your own ideas*



*in your work*". Respondents could reply with a 5-point Likert scale ranging from "always" (1) to "never" (5). Being risk-taking, was based on the following item: "... *I find it hard bearing the responsibility of running my business*". Respondents could reply with a 5-point Likert scale ranging from "strongly agree" (1) to "strongly disagree" (5). These six proxy-indicators had low mutual correlations ( $< 0.3$ ).

*Physical risk exposure* is an indicator developed by EUROFOUND and contains information on the exposure to ergonomic, ambient and biochemical risks (Eurofound, 2017). For the purpose of this study the indicator was reduced to a 0-5 ranged sum scale, with 5 representing the highest level of exposure to physical risks.

Sex and age (continuous) were included as control variables.

### **2.2.2. Country level**

*GDP per capita* represented the general economic context and originated from the Eurostat-indicator "*gross domestic product at market prices (Euro per capita – Current prices)*" for 2015 (Eurostat, 2017b). The original maximum value for this variable was 89,900 (Luxembourg), and the minimum value was 6,300 (Bulgaria).

The *enterprise birth rate* was considered a proxy for the economic entrepreneurship climate (Eurostat, 2017a) and was described as the number of enterprise births in the reference period of 2014 (latest available year), divided by the number of enterprises active in 2014 (Eurostat, 2017a). The original maximum value of the indicator was 24.50 (Lithuania), the lowest value was 4.37 (Belgium). Since no data was available for Greece, the Greek cases were given the mean value of the other countries.

*Entrepreneurship perception* represented the broader socio-cultural climate regarding self-employment. This variable was based on indicators from the Flash Eurobarometer 354: "*Entrepreneurs create new products and services that benefit us all*"; "*Entrepreneurs only think about their own pockets*"; "*Entrepreneurs are job creators*"; "*Entrepreneurs take advantage of other people's work*" (agree/disagree) (TNS Opinion & Social, 2012). The questions were recoded to make sure that for each item a high score meant a positive perception. The country-level aggregated mean had an original maximum value of 3.33 (Denmark) and a minimum value of 2.54 (Croatia). All original values were standardized to z-scores in the multilevel models.

### 2.3. Analyses

To deal with drop-out of cases, we have imputed missing data through an Expectation-Maximization Algorithm (E-M) (McLachlan & Krishnan, 1997) for the following indicators: the inability to recognize opportunities (N missing: 145), physical risk exposure (N missing: 101) and not finding it hard to be self-employed (N missing: 525).

In a first step, descriptive analyses related the independent and control variables to mental well-being. This was done for all countries separately (results not shown) and for the overall sample (table 1 and 2). In table 1, when testing differences between groups, we have used ANOVA. For table 2, we used an ANOVA-test when comparing the mean values (on scale variables) between groups of self-employed. When comparing percentages (on categorical variables) between groups of self-employed, we applied Chi-Square tests. For more information on these methods we refer to Mickey, Dunn, and Clark (2004). Then, linear multilevel random intercepts modelling was applied. A multilevel model is described as a probability model trying “to predict values of some dependent variable based on a function of predictor variables at more than one level” (Luke, 2004). Multilevel modelling is an extension of multiple linear regression. Applying this technique was justified by the hierarchical nature of the data (Luke, 2004), and the research objectives regarding the investigation of country-level characteristics affecting mental well-being of self-employed. A significant *intraclass correlation coefficient* (ICC) supported using multilevel modelling. The multivariate models were estimated subsequently, in line with our research objectives: an intercepts-only model (M0); a collection of bivariate models (all independent variables entered separately) (M1); a control variables model with just age and sex (M2); a consecutive model adding the types of self-employment indicator (M3); a model further adding the entrepreneurial characteristics and physical risk exposure (M4); and lastly a full model also including the country-level variables (M5). For the regression coefficients in the multilevel models (table 3), SPSS uses the Wald statistic for the statistical significance tests; for the comparison of the nested multilevel models we have used Likelihood ratio tests (Norwegian Social Science Data Services, 2013).

### 3. Results

#### **3.1. Determinants of mental well-being**

Table 1 provides overall descriptive statistics on mental well-being for each type of self-employed, the entrepreneurial characteristics, and for physical risk exposure. The average score of the poor mental well-being index in our sample is 1.54.

For the different types of self-employed, the highest mental well-being (1.36) is found in managers (medium to big employers), while farmers have the poorest average mental well-being (1.67).

Self-employed people who solve unforeseen problems (1.52), have better mental well-being than those who do not (1.72). The same can be said about learning new things (1.47), compared to those stating not to learn new things (1.72). On average, self-employed who are underskilled (1.38), and those who are overskilled (1.41), are in a better mental well-being than those who believe their skills correspond well with their duties (1.64). Not finding it hard to be self-employed is negatively correlated to poor mental well-being (-0.23). Poor motivation, inability to recognize opportunities and physical risk exposure are positively correlated to poor mental well-being (0.37; 0.20 and 0.12).

#### **3.2. The relationship between types of self-employment and entrepreneurial characteristics**

The medium to big employers less frequently report a lack of entrepreneurial characteristics and tend to find it easy to be self-employed (see table 2). The group of liberal professions less frequently lacks entrepreneurial characteristics. Dependent freelancers, on average, more often report a lack of entrepreneurial characteristics. Farmers also tend to report a lack of entrepreneurial characteristics, but they less frequently feel under- or overskilled, compared to other types of self-employed. Small employers are on average more motivated and are generally more often able to solve unforeseen problems or recognize opportunities, but find it hard bearing the responsibility of running their own business. Independent freelancers appear to occupy an intermediate position. The average exposure to physical risks was highest for farmers, and lowest for liberal professions and medium to big employers.

**Table 1.** Description of the population studied (N) and their average score (and standard deviation) on or correlation with poor mental well-being<sup>a</sup> (Self-employed, EWCS 2015, EU 28)

	Overall (Mean)	*** (N)	(Std. Deviation)
Other	1.81	256	1.09
Liberal profession	1.48	360	0.92
Farmer: no employer	1.67	540	1.09
Dependent freelancer & own account worker	1.57	951	1.08
Independent freelancer & own account worker	1.52	2,001	1.02
Manager: small employer	1.52	1,035	1.01
Manager: medium to big employer	1.36	305	0.92
<b>Total</b>	<b>1.54</b>	<b>5,448</b>	<b>1.03</b>
<b>Solving unforeseen problems <sup>b</sup></b>		***	
Yes	1.52	4,874	1.02
No	1.72	574	1.10
<b>Total</b>	<b>1.54</b>	<b>5,448</b>	<b>1.03</b>
<b>Learning new things <sup>c</sup></b>		***	
Yes	1.47	3,851	0.99
No	1.72	1,597	1.08
<b>Total</b>	<b>1.54</b>	<b>5,448</b>	<b>1.03</b>
<b>Skills in your own work <sup>d</sup></b>		***	
Underskilled	1.38	598	0.92
Corresponding skills	1.64	3,128	1.01
Overskilled	1.41	1,722	1.07
<b>Total</b>	<b>1.54</b>	<b>5,448</b>	<b>1.03</b>
<b>Country</b>		***	
Belgium	1.53	341	1.10
Bulgaria	1.42	166	1.00
Czech Republic	1.22	148	0.70
Denmark	1.09	62	0.81
Germany	1.38	231	0.92
Estonia	1.68	104	0.93
Greece	1.78	353	0.96
Spain	1.37	577	1.06
France	1.66	131	1.17
Ireland	1.29	222	0.92
Italy	1.73	382	0.92
Cyprus	1.70	181	0.84
Latvia	1.49	131	1.04
Lithuania	1.74	131	1.01
Luxembourg	1.47	103	1.18
Hungary	1.36	148	0.94
Malta	1.51	123	1.01
Netherlands	1.20	160	0.85
Austria	1.31	147	0.88
Poland	1.90	148	1.14
Portugal	1.65	286	0.97
Romania	1.54	187	0.92
Slovenia	1.56	203	0.98
Slovakia	1.47	104	1.00
Finland	1.42	193	0.82
Sweden	1.10	75	0.84
United Kingdom	1.67	251	1.12
Croatia	1.81	160	1.13
<b>Total</b>	<b>1.54</b>	<b>5,448</b>	<b>1.03</b>
<b>Not finding it hard to be self-employed <sup>e</sup></b>	Pearson Cor.	***	
	-0.227	5,448	1.30
<b>Poor motivation <sup>f</sup></b>	Pearson Cor.	***	
	0.372	5,448	0.93
<b>Inability to recognize opportunity <sup>g</sup></b>	Pearson Cor.	***	
	0.198	5,448	0.86
<b>Physical risk exposure <sup>h</sup></b>	Pearson Cor.	***	
	0.123	5,448	0.75

\*\*\* p. ≤ 0.001; \*\* p. ≤ 0.01; \* p. ≤ 0.05

Abbreviations: N = absolute amount of cases, Std. Deviation = Standard deviation, Pearson Cor. = Pearson correlations; All mean; Pearson Cor. and std. deviation values are weighted by w5\_EU28, all N cases are unweighted; a – Poor mental well-being {5 – poor mental well-being, 0 – High mental well-being}; b – Q53c “... main paid job involve solving unforeseen problems on your own?”; c – Q53f “...main paid job involve learning new things?”; d – Q64 “Describe your skills in your own work – {1 – I need further training to cope well with my duties, 2 – My present skills correspond well with my duties, 3 – I have the skills to cope with more demanding duties}; e – Q91d “I find it hard bearing the responsibility of running my business” {1 – Strongly agree, 5 – Strongly disagree}; f – Poor motivation {5 – poor motivation, 0 – high motivation}; g – Recognizing opportunities, Q61i “you are able to apply your own ideas in your work” {1 – Always, 5 – Never}; h – Physical risk exposure, sum scale including the exposure to ergonomic, biochemical and ambient risks {5 – High risk exposure, 0 – low risk exposure}

**Table 2.** Distribution of entrepreneurial characteristics, physical risk exposure, age and sex among the different types of self-employed (percentages and means)  
(EWCS 2015, EU 28)

<i>p-value</i>	***	***	***	***	***	***	***	***	***	***
	<b>Solving unforeseen problems<sup>a</sup></b> (% Yes)	<b>Learning new things<sup>b</sup></b> (% Yes)	<b>Underskilled<sup>c</sup></b> (%)	<b>Overskilled<sup>d</sup></b> (%)	<b>Poor motivation<sup>e</sup></b> (M)	<b>Inability to recognize opportunity<sup>f</sup></b> (M)	<b>Not finding it hard to be self-employed<sup>g</sup></b> (M)	<b>Physical risk exposure<sup>h</sup></b> (M)	<b>Age</b> (M)	<b>Sex</b> (% Male)
Other	79.00	48.00	6.50	38.30	1.39	1.99	3.41	0.87	48.57	47.00
Liberal profession	97.10	91.20	27.20	27.80	0.97	1.52	3.67	0.48	48.14	55.70
Farmer: no employer	89.30	53.50	6.70	23.40	1.20	1.39	3.43	1.15	52.22	60.30
Dependent freelancer & own account worker	84.40	64.50	7.00	36.60	1.25	1.78	3.50	0.87	47.56	62.30
Independent freelancers & own account worker	92.10	76.40	11.70	32.80	1.09	1.48	3.63	0.84	46.32	60.70
Manager: small employer	95.10	75.30	10.20	31.00	0.98	1.34	3.47	0.88	47.56	70.10
Manager: medium to big employer	97.00	84.60	17.30	28.30	0.92	1.36	3.66	0.58	47.04	74.70
<b>Total</b>	<b>91.30</b>	<b>72.70</b>	<b>11.50</b>	<b>32.00</b>	<b>1.10</b>	<b>1.52</b>	<b>3.56</b>	<b>0.84</b>	<b>47.49</b>	<b>62.50</b>

\*\*\* p. ≤ 0.001; \*\* p. ≤ 0.01; \* p. ≤ 0.05

Abbreviations: % Yes = the percentage of the self-employment type which replied yes to the item. All other percentages are indicated similarly. M = Mean value. p = p-value.

Notes: Cases weight by w5\_EU28 (weight for all countries); a – Q53c “... main paid job involve solving unforeseen problems on your own?”; b – Q53f “... main paid job involve learning new things?”;

c – Dummy-variable created from Q64 “Describe your skills in your own work – {I need further training to cope well with my duties (1), My present skills correspond well with my duties (0), I have the skills to cope with more demanding duties (0)}”; d – Dummy-variable created from Q64 “Describe your skills in your own work – {I need further training to cope well with my duties (0), My present skills correspond well with my duties (0), I have the skills to cope with more demanding duties (1)}”; e – Poor motivation {5 – poor motivation, 0 – high motivation}; f – Recognizing opportunities, Q61i “you are able to apply your own ideas in your work” {1 – Always, 5 – Never}; g – Q91d “I find it hard bearing the responsibility of running my business” {1 – Strongly agree, 5 – Strongly disagree}; h – Physical risk exposure, sum scale including the exposure to ergonomic, biochemical and ambient risks {5 – High risk exposure, 0 – low risk exposure}

### **3.3. Entrepreneurial well-being explained: Type of self-employment, entrepreneurial characteristics and entrepreneurial ecosystems**

In table 3, the results of the multilevel models are shown. The intercepts only model (M0) shows that the estimated poor mental well-being score, over all individuals of all countries is 1.50 ( $p = 0.000$ ). The *ICC* expresses that a significant part of 3.4% of the variance in poor mental well-being between individuals is due to country-level characteristics. The bivariate models (M1) show that most of the effects of individual-level entrepreneurial characteristics are statistically significant, except for being underskilled.

The effects of the control variables (model 2), sex and age, are significant. A self-employed man has better mental well-being than a self-employed woman. Moreover, there is a small positive association between age and mental well-being.

Model 3 looks at the effects of the different types of self-employment, controlled for sex and age. Compared to medium and big employers, farmers and dependent freelancers have a significantly higher score for poor mental well-being. The other self-employment types are not significantly different from the reference category.

In model 4 the indicators representing entrepreneurial characteristics and the indicator for exposure to physical risks are added simultaneously. In model 4, the positive effects of poor motivation and the inability to recognize opportunities, and the negative effects of being overskilled and not finding it hard to be self-employed remain. There is also a positive effect of physical risk exposure. Model 4 also shows that after controlling for the indicators of entrepreneurial characteristics, physical risk exposure and the control variables, the effects of dependent freelancers and farmers, loose significance. Especially poor motivation seems to be an important explanatory factor.

Comparing model 3 and 4, a decrease in the *ICC* is observed. In model 3, 3.1% of the variance in poor mental well-being between individuals is due to variables on the country level, this drops towards 2.1% in model 4. Individual differences thus partly explain the aggregate effects. Likelihood-ratio tests show that all nested models, from M0 to M4, have a higher explanatory value than their preceding model.

**Table 3.** Relation between poor mental well-being and types of self-employment, entrepreneurial characteristics, physical risk exposure and country-level characteristics (EWCS 2015, EU 28)

	M0 (Intercept only)			M1 (Bivariate models)			M2 (Controls)			M3 (M2 + Type)			M4 (M3 + Individual Level)			M5 (M4 + Country Level)			
	(B)	CI	p	Intercept	(B)	CI	p	(B)	CI	p	(B)	CI	p	(B)	CI	p	(B)	CI	p
<b>Fixed parts</b>																			
(Intercept)	<b>1.50</b>	<b>1.43 - 1.58</b>	<b>.000</b>					<b>1.31</b>	<b>1.18 - 1.44</b>	<b>.000</b>	<b>1.25</b>	<b>1.09 - 1.42</b>	<b>.000</b>	<b>1.11</b>	<b>0.92 - 1.30</b>	<b>.000</b>	<b>1.11</b>	<b>0.92 - 1.30</b>	<b>.000</b>
<i>Controls</i>																			
Sex (Reference = Female)				<b>1.56</b>	<b>-0.09</b>	<b>-0.14 - -0.03</b>	<b>.002</b>	<b>-0.09</b>	<b>-0.14 - -0.04</b>	<b>.001</b>	<b>-0.08</b>	<b>-0.13 - -0.03</b>	<b>.004</b>	<b>-0.11</b>	<b>-0.16 - -0.06</b>	<b>.000</b>	<b>-0.11</b>	<b>-0.16 - -0.06</b>	<b>.000</b>
Age				<b>1.26</b>	<b>0.01</b>	<b>0.01 - 0.01</b>	<b>.000</b>	<b>0.01</b>	<b>0.01 - 0.01</b>	<b>.000</b>	<b>0.01</b>	<b>0.01 - 0.01</b>	<b>.000</b>	<b>0.01</b>	<b>0.01 - 0.01</b>	<b>.000</b>	<b>0.01</b>	<b>0.01 - 0.01</b>	<b>.000</b>
<i>Type of self-employment</i>																			
Reference = Manager: Medium-big employer				1.40															
Other				<b>0.26</b>	<b>0.09 - 0.42</b>	<b>.002</b>					<b>0.21</b>	<b>0.05 - 0.38</b>	<b>.011</b>	-0.02	-0.17 - 0.12	.748	-0.03	-0.17 - 0.12	.742
Liberal profession				0.04	-0.11 - 0.19	.595					0.01	-0.14 - 0.16	.854	-0.01	-0.15 - 0.12	.840	-0.02	-0.15 - 0.12	.814
Farmer: no employer				<b>0.23</b>	<b>0.09 - 0.37</b>	<b>.002</b>					<b>0.18</b>	<b>0.04 - 0.32</b>	<b>.013</b>	-0.06	-0.18 - 0.07	.365	-0.06	-0.19 - 0.07	.343
Dependent freelancer & own account worker				<b>0.17</b>	<b>0.05 - 0.30</b>	<b>.007</b>					<b>0.15</b>	<b>0.02 - 0.28</b>	<b>.022</b>	-0.09	-0.21 - 0.02	.121	-0.09	-0.21 - 0.02	.112
Independent freelancer & own account worker				0.09	-0.03 - 0.21	.147					0.07	-0.05 - 0.19	.233	-0.04	-0.14 - 0.07	.487	-0.04	-0.15 - 0.07	.468
Manager: small employer				0.03	-0.10 - 0.15	.654					0.02	-0.10 - 0.15	.727	-0.06	-0.18 - 0.05	.258	-0.07	-0.18 - 0.05	.249
<i>Individual level: Entrepreneurial characteristics</i>																			
Solving unforeseen problems <sup>a</sup>				<b>1.69</b>	<b>-0.21</b>	<b>-0.29 - -0.12</b>	<b>.000</b>							-0.01	-0.09 - 0.07	.842	-0.01	-0.09 - 0.07	.842
Learning new things <sup>b</sup>				<b>1.64</b>	<b>-0.19</b>	<b>-0.25 - -0.13</b>	<b>.000</b>							0.01	-0.05 - 0.07	.755	0.01	-0.05 - 0.07	.681
Poor motivation <sup>c</sup>				<b>1.05</b>	<b>0.46</b>	<b>0.43 - 0.47</b>	<b>.000</b>							<b>0.40</b>	<b>0.38 - 0.43</b>	<b>.000</b>	<b>0.40</b>	<b>0.38 - 0.43</b>	<b>.000</b>
Underskilled <sup>d</sup> (Reference = overskilled/skilled)				1.51	-0.05	-0.14 - 0.03	.222							-0.03	-0.10 - 0.05	.533	-0.02	-0.10 - 0.05	.547
Overskilled <sup>e</sup> (Reference = underskilled/skilled)				<b>1.54</b>	<b>-0.11</b>	<b>-0.16 - -0.05</b>	<b>.000</b>							<b>-0.06</b>	<b>-0.11 - -0.01</b>	<b>.026</b>	<b>-0.06</b>	<b>-0.11 - -0.01</b>	<b>.025</b>
Inability to recognize opportunity <sup>f</sup>				<b>1.34</b>	<b>0.21</b>	<b>0.18 - 0.23</b>	<b>.000</b>							<b>0.11</b>	<b>0.08 - 0.14</b>	<b>.000</b>	<b>0.11</b>	<b>0.08 - 0.14</b>	<b>.000</b>
Not finding it hard to be self-employed <sup>g</sup>				<b>2.10</b>	<b>-0.17</b>	<b>-0.19 - -0.15</b>	<b>.000</b>							<b>-0.11</b>	<b>-0.13 - -0.09</b>	<b>.000</b>	<b>-0.11</b>	<b>-0.13 - -0.09</b>	<b>.000</b>
<i>Individual level: physical risks</i>																			
Physical risk exposure <sup>h</sup>				<b>1.38</b>	<b>0.15</b>	<b>0.11 - 0.19</b>	<b>.000</b>							<b>0.12</b>	<b>0.09 - 0.16</b>	<b>.000</b>	<b>0.12</b>	<b>0.09 - 0.16</b>	<b>.000</b>
<i>Country level</i>																			
GDP Per Capita (Z-score)				<b>1.50</b>	<b>-0.06</b>	<b>-0.10 - -0.02</b>	<b>.007</b>										0.02	-0.02 - 0.06	.280
Positive Entrepreneurship Perception (Z-score)				<b>1.52</b>	<b>-0.09</b>	<b>-0.13 - -0.04</b>	<b>.000</b>										-0.05	-0.09 - 0.01	.060
Enterprise Birth Rate (Z-score)				1.50	0.04	-0.01 - 0.10	.103										0.01	-0.03 - 0.05	.582
<b>Random parts</b>																			
Variance individual level		0.96 (.000)																	
Variance country level		0.03 (.002)																	
ICC		0.034																	
-2LL		15282.47																	

Abbreviations: B = beta coefficient, CI = Confidence interval, p = p-value, ICC = Intraclass Correlation Coefficient, -2LL = -2 Log Likelihood. **Bold** values are statistically significant ( $p \leq 0.05$ ); Values in brackets are p values; (B) values are estimates. a - Q53c "... main paid job involve solving unforeseen problems on your own?"; b - Q53f "...main paid job involve learning new things?"; c - Motivation indicator {5 - poor motivation, 0 - high motivation}; d - Q64 "Describe your skills in your own work - I need further training to cope well with my duties"; e - Q64 "I have the skills to cope with more demanding duties"; f- Recognizing opportunities, Q61i "you are able to apply your own ideas in your work" {1 - Always, 5 - Never}; g - Q91d "I find it hard bearing the responsibility of running my business" {1 - agree, 5 - disagree}; h - Physical risk exposure, sum scale including the exposure to ergonomic, biochemical and ambient risks {5 - High risk exposure, 0 - low risk exposure}

Adding the country-level variables in model 5, shows no significant effects of any of the country-level variables. Positive entrepreneurship perception is, however, borderline significant ( $p = .060$ ). This would mean that respondents from countries where the perception about self-employed is more positive than average, also have on average better mental well-being scores. However, the ICC decreases only slightly, and a likelihood-ratio test shows that adding the country-level variables does not improve the explanatory value of the model.

#### 4. Discussion

Our study has three main findings: 1) farmers and dependent freelancers and own account workers (*mentioned as dependent freelancers further*) have worse mental well-being than medium to big employers; 2) entrepreneurial characteristics and exposure to physical risks are able to explain the relationship between poor mental well-being and self-employment types and 3) we were unable to explain country-level variation in mental well-being with the proxy-variables for entrepreneurial ecosystems.

Previous research on differences in mental well-being across types of entrepreneurs is scarce. Our study generally confirms the findings from these few studies but goes a step further by suggesting explanations for these findings.

We found that farmers and dependent freelancers have worse mental well-being when compared to medium to big employers. This is partly in line with our hypothesis 1 and the findings in the literature (Gregoire, 2002; Hounsome et al., 2012; Syrett, 2016). The average mental well-being of self-employed is slightly higher compared to that of European employees. Using the same measure of mental well-being, Anonymous et al. (2017) found an average score of 3.3 for men and 3.6 for women on a ten-point scale for poor mental well-being in European employees (we found an average of 1.5 on a five-point scale in our study). So, while self-employed generally have higher scores, being a farmer or a dependent freelancer lowers the mental well-being to a level comparable to employees.

Drawing on the idea that entrepreneurship constitutes a type of discourse (i.e. an evaluation framework casting the entrepreneur as a hero and engine of society (Laermans, De Cauter, & Vanhaesebrouck, 2016)), we examined the distribution of entrepreneurial characteristics across types of self-employed. These entrepreneurial characteristics were: being creative, risk-taking, innovative, motivated, skilful, and able to recognize opportunities (Gartner, 1990; Hendry, 2004). Our study showed that these “ideal” entrepreneurial characteristics are mostly found among medium to big employers, while less among farmers, and the dependent freelancers.



The absence of some of these entrepreneurial characteristics is positively related to poor mental well-being in self-employed. This holds for poor motivation and being unable to recognize opportunities. The results have also shown that feeling at ease with self-employment, makes it more likely to have a better mental well-being. Another characteristic that is part of the entrepreneurial discourse was being skilful (Gartner, 1990; Hendry, 2004). Being overskilled decreased the poor mental well-being score. Probably workers who are overskilled have more abilities to keep “things in control”.

As these results show, hypothesis 2a can be partially confirmed, disposing over entrepreneurial characteristics seems to be important for the mental well-being of self-employed. One can assume that the absence of such characteristics puts self-employed in a position of being “entrepreneur only in name, but not in reality”. Such failure to meet up to the entrepreneurial ideal could negatively influence mental well-being.

The exposure to physical risks is also positively related to poor mental well-being in self-employed, which is consistent with the literature (Chung & Cheng, 2017) and hypothesis 2a. This relationship is especially true for self-employed farmers (results not shown). One can assume that physical risk exposure influences the mental well-being of farmers in a large part, because their business depends highly on their own physical labour (Solomon, 2002). Also, the lack of health institutions in rural areas, where farmers are mostly located, can strengthen this effect further (Gregoire, 2002).

Partially confirming hypothesis 2b, the relationship between poor mental well-being and farmers disappears when accounting for entrepreneurial characteristics and physical risk exposure. Particularly poor motivation, the inability to recognize opportunity, being overskilled, finding it easy to be self-employed and the exposure to physical risks seem to have influence on the poor mental well-being of farmers and dependent freelancers. Lacking entrepreneurial characteristics seems to be typical for “necessity entrepreneurship” – i.e. becoming self-employed as an escape from economic misery, or as the “only option” in a certain sector, even when the conditions for self-employment are sub-optimal (Binder & Coad, 2013; Warnecke, 2013). This scenario might be more applicable for dependent self-employed than for farmers. Farmers’ mental well-being might be more vulnerable because of their long working hours, financial insecurity, geographical and social isolation (Gregoire, 2002) and more importantly their exposure to physical risks (Gregoire, 2002; Solomon, 2002). In contrast, for “opportunity entrepreneurs”,

becoming self-employed is a voluntary choice in light of the perspective of better earnings and/or more interesting work, compared to (remain) working as an employee. Such a position could explain better (mental) well-being (Binder & Coad, 2013; Warnecke, 2013).

Dependent freelancers and farmers stand out as the least favourable statuses in self-employment, when considering mental well-being. As discussed earlier, this association can be attributed to entrepreneurial characteristics and physical risk exposure. However, it should be clear that these groups are also over-proportionally composed of lower educated and are, on average, more exposed to low incomes. Additional analyses have shown that this is also the case in our data. It is important to realize that the self-employment typology that we use for this study is in fact a form of measurement for socio-economic status, similar to Wright's (1997) class scheme. Implementing additional controls for SES (such as income or education) diminish differences in mental well-being between types of self-employment (results not shown). From that perspective, additionally controlling for SES might be a case of 'over-fitting'. This finding opens an interesting discussion on the patterns of causality between SES, working conditions, poverty, and health. But also puts into sharp relief considerations on equity: Is it "just" that the lower educated are over-exposed to sub-optimal occupational conditions, negatively affecting their (mental) health? These considerations made us decide not to control our results for SES-factors, since this would rather disguise than clarify the dynamics affecting the mental well-being of self-employed.

According to the theory of entrepreneurial ecosystems, three domains of context could influence mental well-being: the cultural, social or material attributes of a society (Spigel, 2017). Our study revealed that country variation in the mental well-being of self-employed does exist (confirming hypothesis 3a), although none of the proxy variables of entrepreneurial ecosystems is significantly related to mental well-being in self-employed. Instead, the country-level variation was partially explained by the aggregated effect of the individual differences. The one, borderline significant country-level effect was from the socio-cultural attribute "positive entrepreneurship perception". In societies where people on average think more positively about self-employment, the mental well-being of the latter group appears to be better. The influence of this particular macro-variable might be explained by the developments in Western countries concerning the amount of start-up enterprises. Lohmann, Luber, and Müller (1999) explain that an increase in the amount of enterprises is either put in motion by an increased demand for specific services by individuals, usually in times of economic prosperity ("*prosperity pull*"), or by exceptional high numbers of unemployment ("*unemployment push*"). In the former case, when enterprises are very customer-

based, entrepreneurs might be more appreciated by the general public. In the latter case however, the average perception on entrepreneurs and businesses might not be as positive. A majority of people in the EU agreed with positive statements (*entrepreneurs are job creators & entrepreneurs create new products that benefit us all*) about entrepreneurs and somewhat disagreed with negative statements (*entrepreneurs take advantage of other people's work & entrepreneurs only think about their own pockets*) about entrepreneurs (TNS Opinion & Social, 2012). These statements, combined as positive entrepreneurship perception, were negatively correlated with poor mental well-being. However, in some countries mental well-being of self-employed and entrepreneurship perception scores are lower, while at the same time higher unemployment rates exist (Croatia: 13.3%; Cyprus: 13%; Greece: 23.6%) (Eurostat, 2017c). These countries correspond to the unemployment push-scenario. Other countries (Denmark: 6.2%; Germany: 4.1%; Sweden: 6.9%) (Eurostat, 2017c) show an opposite pattern and thus rather conform the prosperity pull-scenario.

#### **4.1. Strengths and limitations**

A first limitation of this research is the difficulty in categorising the heterogeneous group of self-employed. The method used for this research was deemed suitable, however it is noteworthy that other methods could have been used as well. One of the groups resulting from the classification that felt problematic is the “other” group. This group often showed clear relations with mental well-being and some of the entrepreneurial characteristics, but the heterogeneous composition of the group made it difficult to draw conclusions. A second possible source of bias was the lack of information for Greece with regard to the enterprise birth rate. Therefore, the enterprise birth rate for Greece was equalised to the centred mean (zero). A sensitivity analysis leaving out Greece demonstrated that attributing such a fictitious value to Greece did not affect the results for the other countries. A third limitation concerns “entrepreneurial characteristics” which are included as proxy-indicators as they are available in the EWCS. Sometimes, the wording of proxy-indicators (Q53c/ Q53f) referred to “*main paid job*”. It is difficult to identify whether the respondents refer to their own self-employed activity, or the business of an important client when answering these questions. Probably entrepreneurial characteristics can be more accurately approached when using a purposefully developed scale instead of secondary data. We nevertheless believe that the entrepreneurial discourse offered us a good theoretical guideline to choose between the available indicators of work quality in the EWCS. In addition, although unable to reproduce the entrepreneurial characteristics in their accurate theoretical meaning, the EWCS is by far the most suitable existing dataset for the objectives of our research. The indicators included show clear relations with mental well-being and some of them have shown to be important for employees

too (Dill, Erickson, & Diefendorff, 2016; Mirowsky, 2011). A fourth limitation is that it should be acknowledged that our study is cross-sectional in design, and we have to be aware of possible selection effects. In terms of this research, the observed relationship between self-employment types and mental well-being could work in two directions. Firstly, the relationship can mean that becoming a certain type of self-employed could increase your mental well-being. Secondly, the relationship could mean that people who have a high mental well-being automatically gravitate towards more “entrepreneurial” self-employment types, and thus become liberal professions or managers, while those with poor mental well-being pursue different forms of self-employment, becoming dependent freelancers or farmers.

Nevertheless, we believe that this paper moves research on work-related mental well-being of self-employed from the descriptive to the explanatory level. We have incorporated explanatory factors with a clear relation to a theoretical framework. This offered us the possibility to study and explain diversity among the self-employed in terms of their mental well-being, nuancing the polarised views on self-employment as a “rosy success story” or as a “source of precarious work” (Blanchflower, 2004).

#### **4.2. Recommendations for future policy and research**

Multiple types of self-employed, with different characteristics exist. These distinctions show that self-employment is not always associated with good mental well-being and that it may not be the most suitable choice for everyone (Blanchflower, 2004). More specifically, policy-makers should be aware of the fact that encouraging self-employment as an escape from unemployment may negatively affect mental well-being of those involved. Other activation methods might be more appropriate for some (Blanchflower, 2004). Our findings reflect the relevance of making a distinction between necessity and opportunity entrepreneurship (Binder & Coad, 2013; Warnecke, 2013), where only opportunity entrepreneurship seems to be the desirable option for policy-makers to support. From a mental health perspective, there is little evidence that becoming self-employed out of necessity is beneficial. In contrast, self-employed with the motivation and spirit to be self-employed could experience personal growth and success (Binder & Coad, 2013). Another suggestion for future policymaking is to set up campaigns to create awareness among the self-employed to keep pursuing education and training, since we found that (over-)skilful self-employed have better mental well-being. It should also be noted that self-employed farmers should be better protected from exposure to physical risks, safety regulation could be one possible solution.

## 5. Conclusion

Our results show that the ideal entrepreneur, as described by Gartner (1990) and Hendry (2004), mostly corresponds to the image of the medium to big employers and liberal professions. These self-employed are most likely to experience the specific characteristics that are in line with the ideal-typical entrepreneurial discourse. Many farmers and dependent freelancers however, might find self-employment a trap, due to a lack of these same entrepreneurial characteristics. Such situations end up negatively affecting mental well-being (Binder & Coad, 2013).

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