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# The Importance of Being in Control of Business: Work Satisfaction of Employers, Own-account Workers and Employees

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# The importance of being in control of business: Work satisfaction of employers, own-account workers and employees

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**Abstract:** Self-employed workers can be own-account workers who control their own work or employers who not only are their own boss but also direct others (their employees). We expect both types of self-employed, i.e., own-account workers and employers, to enjoy more independence in determining their work content (type of work) and more flexibility in shaping their work context (e.g., working conditions) compared to paid employees and hence to be more satisfied with their work. Furthermore, we suspect that employers (who can delegate work to their employees and can help them to develop and grow) enjoy even higher levels of work satisfaction compared to both own-account workers (who are their own boss but do not give direction to others) and (non-supervisory) paid employees (who have to obey orders from others within organizational hierarchies). While prior studies typically broadly compare the work satisfaction of self-employed and paid employees, we distinguish employers from own-account workers within the group of self-employed using data from the ECHP for 14 European countries. Our findings indeed show that employers are significantly more satisfied with their work than both own-account workers and paid employees. Additionally, while employers as well as own-account workers enjoy greater procedural utility than (non-supervisory) paid employees stemming from the content and the context of their work, there also seems to be an additional work satisfaction premium for employers.

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## 1. INTRODUCTION

Self-employment is an important labor market option accounting for approximately 10% of the labor force in higher income countries (Van Stel, 2005). Self-employed individuals generally are responsible for finding their own work and generate their earnings directly from their clients or customers. They may also create jobs for others when they hire employees to grow their businesses. The standard theory for on-the-job search (Mortensen, 1986) predicts that individuals choose the labor market state that yields the highest expected utility for them. Accordingly, an individual becomes self-employed if the expected utility from self-employment exceeds that from paid employment.

Because people derive utility from other aspects of work than earnings, work satisfaction<sup>1</sup> is a more encompassing proxy for utility from work than financial returns (Clark & Oswald, 1996; Frey & Stutzer, 2002; Benz & Frey, 2008). Prior studies consistently find that the self-employed have higher levels of work satisfaction than paid employees (Blanchflower & Oswald, 1998; Blanchflower, 2000; Hundley, 2001; Benz & Frey, 2004; Millán et al., 2013). The greater work satisfaction reported by the self-employed is explained by the higher procedural utility that the self-employed enjoy from work. This procedural utility stems from the fact that the self-employed operate independently in markets, which gives them more freedom to make their own decisions and to choose their own work tasks compared to paid employees who work in hierarchies in which they are subject to the decisions of others (Eden, 1975; Hamilton, 2000; Hundley 2001; Benz & Frey, 2008).

While prior studies on work satisfaction and self-employment typically broadly compare the self-employed to paid employees and treat the self-employed as one single homogeneous group (Blanchflower & Oswald 1998; Blanchflower 2000; Blanchflower et al. 2001; Parasuraman & Simmers, 2001; Benz & Frey, 2004, 2008; Bradley & Roberts, 2004; Millán et al., 2013), we argue that it makes sense to distinguish employers from own-account workers *within the group of self-employed* when investigating work satisfaction. Employers not only work independently in markets similar to own-account workers, but unlike the own-account workers, they are also part of an organizational hierarchy similar to paid employees. The fact, however, that employers operate at the top of a hierarchy distinguishes them from paid employees who have to obey others within a hierarchy. Compared to paid employees, employers not only enjoy advantages related to their independence in terms of decision making and choosing work tasks but also because they control and direct others. Hence, while both groups of self-employed are likely to enjoy greater procedural utility from operating independently in markets than paid employees, employers may additionally enjoy procedural utility from operating at the top of a hierarchy and directing others. This gives opportunities to create a more rewarding work content as it gives room to delegate less appreciated work tasks to others and to concentrate on tasks one prefers and is best at. In addition, directing others may also serve to fulfill one's desire for relatedness, e.g., by helping and receiving appreciation from the persons being directed and, hence, also in this way contributes to self-determination and the experience of procedural utility.

The above has motivated us to compare work satisfaction and utility levels of employers, own-account workers and paid employees. The first aim of our study is to compare work satisfaction and procedural utility differences of employers and own-account workers with those of employees. As indicated above, we expect both employers and own-account workers to enjoy more procedural utility from work than paid employees. While prior studies typically argue that the autonomy that the self-employed enjoy from operating independently helps them to make the *content* of their work rewarding (Benz & Frey, 2008), we contend that that such autonomy will also help to create a favorable work *context*. Hence, we argue that the self-employed not only derive more procedural utility than paid employees from meaningful work content but also from more attractive working conditions (Oostveen et al., 2013). Indeed, it is well known that for some individuals, self-employment is a more desirable career option than paid employment because it provides better possibilities to create a work context more in line with their specific demands (Carr, 1996; Boden, 1999; Zissimopoulos & Karoly, 2007). In addition, we argue that employers compared to paid employees also derive procedural utility from

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<sup>1</sup> Throughout this research, we use the term work satisfaction to refer to satisfaction from work or job satisfaction.

directing others, which fulfills the desire for relatedness. We test this idea by distinguishing paid employees with a supervisory role from paid employees with a non-supervisory role.

The second aim of our research is to investigate work satisfaction and utility differences among the self-employed i.e., between employers and own-account workers. While we expect employers to enjoy higher levels of procedural utility (from work content, work context and from directing others) than own-account workers, they are also likely to experience higher levels of outcome utility in terms of earnings and work security than this latter group. This is expected because having employees is indicative of business success and increased chances of survival (and hence of better work security) (Earle & Sakova, 2000; Tamvada, 2010; Sorgner, Fritsch & Kritikos, 2014).

Using panel data from the European Community Household Panel (ECHP) for 14 EU countries and work satisfaction to proxy overall utility from work, we find that both employers and own-account workers report higher levels of overall work satisfaction than paid employees. Fixed-effects estimations indicate that it is unlikely that this result stems from more satisfied persons (employees) becoming own-account workers or employers. In addition, our findings indicate that both groups of self-employed enjoy higher procedural utility than paid employees stemming not only from their work content but also from their work context. Furthermore, while procedural aspects of work content and context fully account for the higher levels of work satisfaction of own-account workers compared to paid employees, such procedural aspects do not entirely explain why employers are more satisfied with their work than paid employees. To test our suspicion that employers may also derive procedural utility from giving direction to others, we distinguish paid employees with a supervisory role (managers) from non-supervisory paid employees. Both employers and managers are found to be more satisfied with their work than paid employees with a non-supervisory role, even when controlling for procedural aspects of work content and context. This provides some support for our idea that managing others helps to fulfill one's need for relatedness and self-determination and, hence, contributes to increased levels of work satisfaction.

We also find that employers are considerably more satisfied with their work than own-account workers. Although employers enjoy similar procedural utility to own account workers, the higher outcome utility (i.e., satisfaction with earnings and with job security) they derive from their work partly explains differences in work satisfaction between employers and own-account workers. Interestingly, fixed-effects techniques suggest that employers have a natural tendency to be more satisfied with their work and, hence, that the satisfaction of own-account workers cannot be expected to increase from taking on employees.

The remainder of this paper is set out as follows. Section 2 describes the underlying rationale and discusses the related literature, while section 3 describes the data, methodology and variables. The results are presented in section 4. Section 5 concludes and provides some further discussions.

## **2. LITERATURE BACKGROUND**

### *Segmentation within self-employment*

Several entrepreneurship studies hint at the existence of segmentation within the self-employment sector and distinguish between the self-employed who monitor others and own-account workers (Banerjee & Newman, 1993; Earle & Sakova, 2000; Cowling et al., 2004; Congregado, Millán & Román, 2010). This distinction between employers and own-account workers is considered to be relevant, for example, to understand the role that entrepreneurs play in markets and in the process of economic development. It has been highlighted that the self-employed who employ others tend to resemble the dynamic and creative entrepreneurship view and are more likely to represent "entrepreneurial pull", while the own-account workers are more often stagnant and unproductive and more likely to reflect the "unemployment push" (Earle & Sakova, 2000; Mandelman & Montes-Rojas, 2009; Román et al. 2013). When the self-employed create jobs for others, this often signals that the business is performing well, and it has been found that the self-employed who employ others on average have higher returns or earnings than own-account workers (Earle & Sakova, 2000; Tamvada, 2010; Sogner et al., 2014). Operating as an employer requires different types of abilities than own-account work (Lazear, 2005). When the self-employed (decide to) employ others, they, for example,

need to make decisions about what labourers to hire and how these labourers should allocate their time and effort, in which case they need to exert a function of supervision (Hébert & Link, 2009). The self-employed with higher ability (and control spans) often end up recruiting personnel and as managers of larger firms (Lucas, 1978). In sum, the self-employed with employees are more likely to represent true “entrepreneurial” activity than are own-account workers, and in this paper, we argue that this distinction between employers and own-account workers matters for work satisfaction.

While most prior studies on work satisfaction do not differentiate employers from own-account workers, in his estimates of work satisfaction using UK European Community Household Panel data, Taylor (2004) makes a distinction between the self-employed with and without employees and compares these two groups of self-employed with paid employees. He finds that among men, self-employed workers, both own-account workers and, in particular, employers are more satisfied with their work than paid employees. We extend this initial study by comparing the work satisfaction levels of both groups of self-employed to employees using a large number of countries and by trying to argue from procedural utility aspects why differences (can be expected to) exist in work satisfaction between the two groups. Furthermore, in our study, we are also interested in comparing work satisfaction levels of the own-account workers and employers to investigate whether and why satisfaction levels differ among these two groups of self-employed.

#### *Work satisfaction of employers, own-account workers and employees*

Work satisfaction refers to the extent to which people like their work and has, for example, been linked to enhanced individual performance (Sousa-Poza & Sousa-Poza, 2000) and organizational effectiveness (Ostroff, 1992; Koys, 2001). Economists started to do empirical analyses on the determinants of work satisfaction in the mid-1990s (Clark & Oswald, 1996; Clark et al., 1996; Clark, 1997). Work satisfaction is typically considered to be influenced by objective conditions such as income, hours worked, individual characteristics and work characteristics. Researchers have also emphasized the importance of subjective aspects (such as comparisons, expectations, aspirations and values) and environmental or contextual influences for determining work satisfaction (Clark & Oswald, 1996; Clark, 1997; Sousa-Poza & Sousa-Poza, 2000; Booth & Van Ours, 2009; Clark et al., 2009).

With respect to characteristics of work, researchers on work satisfaction have often made a distinction between individuals working in paid employment and individuals who are self-employed. Such studies typically show that the self-employed are more satisfied with their work than paid employees (Blanchflower & Oswald 1998; Blanchflower 2000; Blanchflower et al. 2001; Parasuraman & Simmers, 2001; Benz & Frey, 2004, 2008; Bradley & Roberts, 2004; Millán et al. 2013). This finding has motivated researchers to search for explanations for such satisfaction differences. Explanations mainly point towards the higher enjoyment of procedural utility aspects of work by the self-employed stemming from their higher flexibility and autonomy (Eden, 1975; Hamilton, 2000; Hundley 2001; Benz & Frey, 2008).

Procedural utility means that people value not only outcomes from work (e.g., earnings) but also how such outcomes are generated (Benz, 2005; Benz & Frey, 2008). According to the procedural utility view, how work is experienced in terms of autonomy, the use of one’s competences and the quality of work relations provide a source of self-determination, which is a basic psychological need. Self-employment may then contribute to self-determination and hence to procedural utility at work in several ways. Self-employment, for example, provides autonomy as the self-employed operate independently in markets, which gives them substantial freedom to choose their own work activities or tasks. This autonomy naturally helps to make the work content rewarding, which strongly relates to an individual’s desire for competence. Thus, self-employed individuals enjoy higher procedural utility because they have more freedom to take their own decisions and to choose their work tasks compared to paid employees who work in hierarchies and are subject to the decisions of others (Benz & Frey, 2008). Self-employed individuals also appear to have much more freedom in choosing the order of work tasks, working methods, and speed or rate of work and are better able to apply their own ideas to work compared to paid employees (Oostveen et al., 2013).

According to activity-based theory, involvement in meaningful and challenging activities leads to flow i.e., a mental state in which one is completely engaged in a task that enhances satisfaction (Csíkszentmihályi, 1975; Myers & Diener, 1995). Perceiving one's work as meaningful can be achieved through autonomy at work. Thus, individuals who can freely choose work activities or the ways in which to perform their work tasks are more likely to consider work as meaningful and less as an obligation. Therefore, it can be argued that the self-employed who have substantial autonomy in their work are more likely to consider their work meaningful than paid employees by having more control over their work. Hence, self-employed individuals are likely to experience more flow in their work than employees (Bradley & Roberts, 2004; Ceja, 2009; Graham et al., 2004; Patzelt & Shepherd, 2011), which subsequently enhances satisfaction (Erdogan et al., 2012).

Benz & Frey (2008) take self-employment as an important case of independence. They distinguish the self-employed from paid employees based on the notion that the self-employed operate directly in markets, while paid employees operate within organizational hierarchies. They argue that the self-employed derive procedural utility from operating directly in markets, e.g., because it gives independence and freedom in making decisions, and that this explains why the self-employed derive higher procedural utility and hence higher satisfaction from work than paid employees working in organizations.

According to our opinion, the institutional distinction between markets and hierarchies is not completely appropriate to distinguish the self-employed from paid employees. The reason for this is that the group of self-employed comprises employers who employ others and own-account workers who work on their own without having employees. Both employers and own-account workers directly engage in market transactions, and this indeed distinguishes them from paid employees. However, as opposed to own-account workers, employers do operate within organizational hierarchies. Unlike paid employees, however, employers are not subject to such hierarchies but instead take a position at the top of organizational hierarchies. As a result, employers have control over others (their employees), which distinguishes them from own-account workers as well as paid employees who, at least to some extent, have to obey orders from others within the hierarchies in which they operate.

Thus, when using the concepts of markets and hierarchies to differentiate self-employed and paid employees, the employers should be distinguished from the own-account workers within the group of self-employed. This makes employers a special type of independent actor as they enjoy independence within markets but also within hierarchies. Operating at the top of a hierarchy brings advantages in terms of procedural utility for employers compared to own-account workers, as it provides the opportunity to assert control over others (own-account workers only have control over themselves, i.e., they are only their own boss and not the boss of others); it also provides more freedom to choose one's own tasks, as it offers the possibility to delegate work to others. Furthermore, compared to paid employees, employers not only enjoy advantages related to their independence in terms of decision making and choosing work tasks but also because they can control others, while employees usually, at least to some extent, have to obey orders from others. Directing others may fulfil one's need for relatedness or caring about and contributing to others and may help individuals to feel connected in a meaningful way to others.

In sum, the distinction between employers and own-account workers is expected to be relevant for work satisfaction. The own-account workers enjoy procedural utility from operating as independent actors in markets and, therefore, are likely to report greater work satisfaction than paid employees. While the same is true for employers, employers may also enjoy their position at the top of the hierarchy for procedural reasons because it offers freedom and independence and allows one to be effective but also because it provides control over others. Employers act independently in markets similar to own-account workers, but they also operate at the top of a hierarchy that gives them control over others and the possibility to delegate work, providing them with additional freedom as to what tasks to focus on themselves. Thus, employers have more independence and control both compared to own-account workers (who are their own boss but not the boss of others) and compared to paid employees (who usually have to obey orders from others). Hence, we expect both own account workers and in particular employers to derive a higher work satisfaction than paid employees but also

that the work satisfaction enjoyed by employers is significantly higher than that of own-account workers. Building on the job control-demand hypotheses, we assert that employers are likely to have more control (as they not only direct themselves but also others) and face greater job demands than own-account workers, suggesting that their jobs are more active, which is likely to result in greater work satisfaction. Based on the above reasoning, we suggest the following hypotheses:

*Hypothesis 1a.* Own-account workers report higher levels of work satisfaction than people employed in organizations.

*Hypothesis 1b.* Employers report higher levels of work satisfaction than people employed in organizations.

*Hypothesis 1c.* Employers report higher levels of work satisfaction than own-account workers.

*Sources of procedural utility: work content, work context and control over others*

There are several sources of procedural utility, e.g., it can be derived from the work itself or from working conditions. Both own-account workers and employers are likely to derive greater procedural utility from the work itself than paid employees based on their independence and freedom, e.g., in choosing their work tasks. Therefore, our next set of hypotheses states the following:

*Hypothesis 2a.* Own-account workers derive higher procedural utility from work content than people employed in organizations.

*Hypothesis 2b.* Employers derive higher procedural utility from work content than people employed in organizations.

Prior studies typically argue that the autonomy that the self-employed enjoy from operating independently helps them to make the content of their work rewarding (Benz & Frey, 2008). Self-employment, however, may also be an interesting option for individuals because it helps to create a more fulfilling work context, which also contributes to experiencing work positively. Hence, procedural utility can not only be derived from freedom in shaping one's work content but also from autonomy and flexibility in creating one's own work context. We argue that both employers and own-account workers will be better able to shape their own work context, e.g., in terms of determining their working conditions and working place, than paid employees and hence will enjoy higher procedural utility from work context. Self-employment gives flexibility in choosing and creating one's working place and freedom to work when and where one wants.

Although the self-employed more often work in their own time and put more hours into their work, there are several advantages for them in regard to the conditions in which they work, including the physical environment (Oostveen et al., 2013). Their place of work, for example, is mostly at the premise of their own business, and most of them have substantial freedom in setting their working time arrangements. Furthermore, it is much easier for them compared to paid employees to take a few hours off during working hours to take care of a personal or family issue, and they less often have fixed starting and finishing hours. Finally, the pace of their work compared to that of paid employees is much less dependent upon the work performed by others or upon demands by others such as clients. Such favorable conditions stem from the autonomy of the self-employed and are likely to contribute positively to how their work is experienced. This leads us to the following hypothesis:

*Hypothesis 3a.* Own-account workers derive higher procedural utility from work context than people employed in organizations.

*Hypothesis 3b.* Employers derive higher procedural utility from work context than people employed in organizations.

As indicated above, individuals may also derive procedural utility from giving direction to others as this may serve to fulfill people's desire for relatedness or their need to care about and be cared about by others and to contribute to something greater than themselves. If this is true, employers should be more satisfied with their work than paid employees with non-supervisory roles, even when taking account of the higher procedural utility that employers derive from their work content and context as postulated above. Hence:



*Hypothesis 4.* Employers derive higher satisfaction from work than non-supervisory paid employees above and beyond the higher procedural utility that they enjoy from their work content and context.

#### *Employers versus own-account workers*

Operating at the top of a hierarchy may lead to increased outcome utility. Employers usually have higher earnings than own-account workers (Earle & Sakova, 2000; Tamvada, 2010; Sogner et al., 2014), and hence, their satisfaction with earnings may also be higher. Employers are also likely to enjoy higher work security than own-account workers stemming from their better survival chances (Earle & Sakova, 2000). Furthermore, operating at the top of a hierarchy could also bring employers advantages in terms of procedural utility compared to own-account workers as it provides the possibility to delegate work to others, which the own-account workers do not have, and hence provides even more freedom to choose one's own tasks. The working conditions of employers also seem to be more favorable than those of own-account workers (Oostveen et al., 2013). Thus, employers are likely to enjoy higher procedural utility from work content and context than own-account workers. In addition, employers exert control over or give direction to others, which may provide them with further procedural utility compared to own-account workers. These arguments lead to our fifth set of hypotheses:

*Hypothesis 5a.* Employers derive higher outcome utility from work than own-account workers.

*Hypothesis 5b.* Employers derive higher procedural utility from work content than own-account workers.

*Hypothesis 5c.* Employers derive higher procedural utility from work context than own account workers.

*Hypothesis 5d.* Employers derive higher satisfaction from work than own-account workers above and beyond the higher procedural and outcome utility that they enjoy from their work content and context.

### **3. DATA, METHODOLOGY AND VARIABLES**

#### **3.1 Data source and sample**

*Data source.* The empirical analysis is based on data from the European Community Household Panel (ECHP) for the period 1994-2001.<sup>2</sup> The ECHP is a standardized multi-purpose annual longitudinal survey carried out at the level of the EU-15 reflecting a nationally representative random sample of households and individuals in the participating countries.<sup>3</sup> The survey was designed and coordinated by the Statistical Office of the European Communities (Eurostat). The target population of the ECHP consists of people living in private households throughout the national territory of each participating country. The definition of household is based on the standard criteria of "sharing the same dwelling" and "common living arrangements". Individuals in the sample who move or join a new household are contacted at their new location. The survey also covers all persons cohabiting with any of the original sample persons in the same household. These procedures are followed to reflect the demographic changes in the population and to maintain the panels' cross-sectional representativeness of the population.<sup>4</sup>

Each year in the period 1994-2001, all members of the selected households in the participating countries were interviewed about issues relating to demographics, labor market characteristics, income and living conditions. The same questionnaire was used in all countries, which makes the information directly comparable. The first wave of data collection was held in 1994. We have information on 60,500 nationally representative households, i.e., approximately 130,000 individuals aged 16 years and older, for the entire period 1994-2001.

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<sup>2</sup> ECHP data are used with the permission of Eurostat (contract ECHP/2006/09 with the Universidad de Huelva).

<sup>3</sup> Information concerning job satisfaction for Sweden was not collected.

<sup>4</sup> See Peracchi (2002) for a review of the organization of the survey, and a discussion of the issues a researcher may face when using these data.

*Our sample.* We limit our sample to include only men and women aged 18 to 65 working in any business sector either as a self-employed or paid employee in the private sector. We removed observations with missing data for any of the variables included in our regressions. After filtering, the final sample used for our estimations contains 191,872 observations (57,857 individuals), from which 48,481 observations (14,769 individuals) are self-employed individuals.

### 3.2 Method

We aim to explain the variance in the satisfaction profile of individual labor statuses. To investigate the relation of occupational status (employer, own-account worker and paid employee) with overall work satisfaction (which is presented as an ordinal scaled variable), we use ordered logit models. To avoid violation of the proportional odds assumption (also called parallel regressions assumption or parallel lines assumption), we apply generalized ordered logit models.<sup>5</sup>

Within this framework, an individual's self-reported overall work satisfaction ( $sat_i$ ) is interpreted as an ordinal indicator of a latent wellbeing variable ( $WB_i$ ), which is unobservable. Our dependent variable is overall work satisfaction. These variables range from 1 to 6 and equal 1 for individuals who are not satisfied with their present work and 6 for those who are fully satisfied with their work. The dependent variable has been reclassified into three values for work satisfaction: (1) dissatisfied, (2) neither dissatisfied nor satisfied, and (3) satisfied.<sup>6</sup> The relationship between self-reported work satisfaction ( $sat_i$ ) and the latent variable ( $WB_i$ ) is given by

$$\begin{aligned} sat_i = 1 & \text{ if } -\infty < WB_i \leq \mu_1 \\ sat_i = 2 & \text{ if } \mu_1 < WB_i \leq \mu_2 \\ sat_i = 3 & \text{ if } \mu_2 < WB_i \leq +\infty \end{aligned}$$

where  $\mu_1$  and  $\mu_2$  are the thresholds of the variable  $WB_i$  that divide its range into separate intervals associated with the different levels of job satisfaction.

The generalized ordered logit model can be written as

$$Pr(sat_i > j) = g(X\beta_j) = \frac{\exp(\alpha_j + X_i\beta_j)}{1 + \exp(\alpha_j + X_i\beta_j)}, j = 1, 2$$

where the vector  $X_i$  represents individual and firm-specific characteristics and economic conditions;  $\beta_j$  is the associated vector of coefficients to be estimated<sup>7</sup>; and  $g(\cdot)$  is specified as the logistic cumulative distribution function. It can be determined that the probabilities that  $sat_i$  will take on each of the values 1, 2 and 3 is equal to

$$\begin{aligned} Pr(sat_i = 1) &= 1 - g(X_i\beta_1) \\ Pr(sat_i = 2) &= g(X_i\beta_1) - g(X_i\beta_2) \\ Pr(sat_i = 3) &= g(X_i\beta_2) \end{aligned}$$

<sup>5</sup> Different tests of the proportional-odds assumption (whether the coefficients are equal across categories) have been performed for all our estimations (a global test of whether any variable violates the parallel lines assumption). All these tests provided evidence that the parallel regression assumption was violated and, as a consequence, demonstrate the need to apply generalized ordered logit models. See Williams (2006) for a complete description of the methodology.

<sup>6</sup> There are two reasons for doing this: First, in most cases, there are only a few observations in the low satisfaction scales. A second reason for recoding is that we assume that there is quite a bit of "noise" in detailed scales. This can be illustrated using the following - much-cited - example: people usually know if they are tall or short; they may, however, have difficulty in classifying themselves as very short or extremely short.

<sup>7</sup> The formulas for the parallel lines model and generalized ordered logit model are the same, except that in the parallel lines model, the Betas (but not the Alphas) are the same for all values of  $j$ .

Finally, because the ECHP tracks the same individuals from 1994 to 2001, standard errors are adjusted for intra-individual correlation to control for the possible existence of unobserved heterogeneity.

In a second step and given the panel data structure of our dataset, we also apply fixed-effects linear regression estimates. Thus, by comparing observations over time, we can both address the concern that certain groups have a natural tendency to be more satisfied with their work and reduce the possibility of omitted variable bias. Given that the dependent variable is interpreted as continuous in these estimations, it has not been reclassified and ranges from 1 to 6.

### 3.3 Independent and control variables

#### *Main explanatory variables*

The analysis concentrates first on comparing work satisfaction differences between self-employed (i.e., employers and own-account workers) and paid employees. Both categories within self-employment are separately identified by combining the information included in two separate questions in the ECHP. The individuals in our dataset were asked about (i) their main activity status (paid employment, self-employment, unpaid work in a family enterprise, education/training, unemployment or inactivity) and (ii) the number of regular paid employees in the local unit of their current job. Thus, conditional on self-classification, those self-employed with 0 employees are considered own-account workers, and those self-employed with 1 or more employees are classified as employers.

Second, the analysis further distinguishes between those paid employees who do have a supervisory role and those who do not. These groups within paid employment are identified by using the information about job status in the ECHP, which allows discriminating between those with and without supervisory roles at work. In sum, the following dummies that account for an individual's labor market status are used: (i) employer; (ii) own-account worker; (iii) paid-employee; (iv) paid employee with supervisory role; and (v) paid employee with non-supervisory role. Both the set of dummies and the reference category vary depending on the purposes of each particular model presented.

#### Control variables

The ECHP data contains detailed information for several important control variables. In the analyses, we include a large number of individual-specific control variables that are known to affect satisfaction with work such as demographic indicators (gender, age, cohabitation status, number of children, health status), level of education, job tenure, hours of work per week, and level of earnings. For comparability purposes, incomes are corrected by purchasing power parities (comparability across countries) and harmonized consumer price indexes (comparability across time).

We also include some variables capturing satisfaction with different aspects of work in the analysis. In line with Benz & Frey (2008), we divide these aspects into outcome-oriented and procedural-oriented aspects. In addition, we distinguish procedural-oriented aspects related to the content of work and procedural-oriented aspects related to the work context. Regarding outcome-oriented aspects, we include satisfaction with earnings as well as satisfaction with job security.<sup>8</sup> Regarding procedural-oriented aspects for work content, we include satisfaction with the type of work and a measure reflecting whether one is adequately skilled for the work one does. As regards work context, we include satisfaction with working conditions and distance from work. Finally, we include business sector, country, and year dummies to control for industry, country, and business cycle effects, respectively.<sup>9</sup>

## 4. EMPIRICAL ANALYSIS

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<sup>8</sup> Note that Benz & Frey (2008) use satisfaction with hours worked as an outcome-oriented indicator and not satisfaction with earnings (which possibly was not included in their dataset). Because earnings and job security are clearly outputs from work, while hours worked represent a work input (Sousa-Poza & Sousa-Poza, 2000), we decided to use satisfaction with earnings and satisfaction with job security as outcome-oriented aspects of work in our analysis.

<sup>9</sup> Variable definitions are reported in Table A1 in the Appendix.

#### 4.1 Univariate analysis

The relative weights of our different labor market statuses (i.e., employer, own-account worker, paid-employee with supervisory role and paid employee with non-supervisory role) for all participating countries for the whole period under consideration are presented in Table 1 below.

--- Insert Table 1 about here ---

In our final sample (191,872 observations), 23,642 (12.3%) refer to employers, 24,849 (12.9%) to own-account workers, 14,761 (7.7%) to paid employees with a supervisory role and, finally, the remaining 128,630 (67%) to those paid employees with a non-supervisory role. These weights, although following similar patterns across countries, also show some interesting differences. Italy, Greece and the UK are the countries presenting the highest proportion of employers within the sample (25%, 21.6% and 18.7%, respectively), whereas the Netherlands (1.4%) and France (2.5%) present the lowest employer rates. Greece and the UK also show the highest proportion of own-account workers (29.4% and 20.7%, respectively), followed by Finland (20%). In contrast, Luxembourg (2.8%), France (3.2%) and Germany (3.2%) show the lowest values in terms of own-account workers. Regarding paid employees with a non-supervisory role, the Netherlands, France and Germany emerge as the countries with the highest weights for this group (81%, 80% and 79.2%, respectively), whereas Greece presents the lowest figure (46.6%), followed by the UK (55.1%). Finally, the countries presenting the highest rates of paid employees with supervisory roles are Denmark (15.8%), France (14.3%) and Belgium (12.1%). Conversely, again Greece is observed to be the country with lowest rates of employees with supervisory roles (2.4%), followed by Portugal (2.8%) and the UK (5.5%).

Table 2 below presents reported levels of satisfaction with work and the percentage of respondents that report high satisfaction with work for our different labor market statuses for all participating countries.

--- Insert Table 2 about here ---

It shows that, on average, employers have higher levels of satisfaction with work than own-account workers, which also applies to all countries when individually considered with the exception of France and the Netherlands. With regard to paid employees, we observe that those having a supervisory role are more satisfied with work than their counterparts without supervisory roles for all participating countries. When comparing self-employed to paid employees, first, paid employees with non-supervisory roles seem to be less satisfied than own-account workers, which holds for all countries but Austria, Greece and Portugal. Similarly, employers are more satisfied with work than paid employees who do not have a supervisory role, which holds true for all participating countries but Austria. Regarding paid employees with supervisory roles, they are more satisfied than own-account workers for all countries but the Netherlands. Finally, paid employees with supervisory roles also seem to be somewhat more satisfied with work than employers, although this does not hold for Denmark, Germany, Ireland and the UK.

Table 3 below presents some descriptive information for our different labor market statuses.

--- Insert Table 3 about here ---

Table 3 reveals that participation of females in self-employment is rather low (26.4%), especially within the group of employers (23.6%). Similarly, females working as paid employees with supervisory roles are scarce (21.1%), whereas their weight in non-supervisory positions is clearly higher (approximately 40%). Regarding formal education, the group of paid employees with supervisory roles is the one with higher levels of tertiary education (39.1%). We also observe that employers have received higher levels of education than both own-account workers and paid employees without supervisory roles (17.2%, 12.7% and 14.6%, respectively). The group of paid employees with supervisory roles is, however, the one with the highest levels of tertiary education (39.1%).

With respect to earnings, both paid employees holding supervisory roles and employers are the groups with higher average earnings (approximately €4,000). Compared to own-account workers and paid employees with non-supervisory roles, both employers and paid employees with supervisory roles earn approximately €5,000 and €6,000 more, respectively. Employers' earnings are, however, more unequal by far (approximately 31,000 in terms of standard deviation for annual earnings).

Concerning job tenure, the group of paid employees with non-supervisory roles is least experienced (approximately 8 years, on average), which might partially explain their lower earnings. This group is also the younger one on average (36.6 years, whereas all other groups are over 41 years).

With regard to business sectors, relevant differences emerge as regards labor status. Paid-employees working in the agricultural sector are rare (only 3% of all paid employees), whereas employers (19% of employers) and, above all, own-account workers (approximately 39% of own-account workers) more commonly work in agriculture. On the contrary, self-employment is scarce in the industrial sector (approximately 11% of total self-employment), whereas paid employees are more likely to operate within industry (approximately 33% of paid employees). Finally, the proportion of workers (within their groups) working in both construction and services is rather similar. Thus, approximately 11% of both self- and paid employees are employed in construction, whereas the same figure rises to 50% in services.

Finally, with respect to variables capturing satisfaction with work outcomes, content and context, first, we observe that paid employees with supervisory roles are those ranking the highest in terms of satisfaction with job security, earnings, type of work, and absence of being over-skilled, as well as in terms of satisfaction with working conditions and the working environment. With respect to satisfaction with distance to work and commuting, however, both employers and own-account workers are the most satisfied.

## 4.2 Multivariate analysis

### *Generalized ordered logit regressions*

In a first step, we run 8 different (generalized) ordered logit regressions, which serve to test the validity of our hypotheses. Models 1 to 5 and 8 attempt to search for differences between employers, own-account workers and paid employees, whereas models 6 and 7 also distinguish between paid employees with and without supervisory roles. The results from these ordered logit estimations are presented in Table 4 below.

--- Insert Table 4 about here ---

Model 1 of Table 4 confirms that both employers and own-account workers are significantly more likely to report higher levels of overall work satisfaction than paid employees, which is in line with hypotheses 1a and 1b. The difference in satisfaction scores is much larger between employers and paid employees than between own-account workers and paid employees. Thus, compared to paid employees, we observe a 9.5% increase in the probability of being satisfied with work in case of own-account workers, which rises to 22.6% for employers. Further, model 1 also shows that employers are approximately 13% more satisfied with their work than own-account workers, which confirms hypothesis 1c.

In the next four models of Table 4 (models 2-5), we test whether overall work satisfaction differences between employers, own-account workers and paid employees can be explained by outcome-related or procedural-related aspects of work. When including the outcome-oriented aspects (model 2), it can be observed that the difference in chances of being satisfied with one's work between employers and paid employees remains rather similar (approximately 24%). Further, the difference between own-account workers and paid employees rises from 9.5% to 19.4%, whereas between employers and own-account workers, it is significantly reduced from approximately 13% to only 4.4%. These results indicate that both employers and paid employees enjoy substantially higher outcome utility than own-account

workers and that, when controlling for this aspect of overall work satisfaction, the difference in the likelihood of being satisfied between employers and paid employees versus own-account workers is significantly reduced.

When, instead of outcome-oriented aspects, we include procedural-oriented aspects related to work content (model 3) as well as work context (model 4), the difference in chances of being satisfied with one's work between employers and own-account workers is not affected (compared to model 1), indicating that both employers and own-account workers enjoy similar utility derived from work content and context. It can also be observed that differences in the likelihood of being satisfied with one's work between own-account workers and paid employees are now completely eliminated, while the chances for employers to be more satisfied with work than paid employees, although still substantial, have been reduced (from approximately 24% to approximately 13%). These results suggest that both employers and own-account workers enjoy substantially higher utility derived from work content and context than paid employees and that, when controlling for both types of procedural aspects, the difference in the likelihood of being satisfied between own-account workers and employers versus paid employees is either eliminated or significantly reduced. These results are in line with our hypotheses 2a, 2b, 3a and 3b.

This idea is also supported when we include procedural-oriented aspects of work content and work context in one model (model 5). Thus, we observe that this simultaneous inclusion does not affect the difference in the likelihood of being satisfied with work between employers and own-account workers (as happens in models 3 and 4). In addition, the difference in chances of being satisfied between both employers and own-account workers compared to paid employees is further reduced. Thus, the difference drops from approximately 13% (obtained in models 3 and 4) to approximately 8% when comparing employers and paid employees, whereas this difference becomes negative when comparing own-account workers and paid employees, i.e., the probability of being satisfied with work in case of paid employees is approximately 4% higher compared with own-account workers. Hence, while procedural aspects of work content and context fully account for the higher levels of work satisfaction of own-account workers compared to paid employees, such aspects do not entirely explain satisfaction differences between employers and paid employees. As indicated, we suspect that employers also derive procedural utility from giving direction to others, which may help to fulfill one's need for relatedness.

To test our suspicion, we distinguish between paid employees with and without supervisory roles in the next model of Table 4 (model 6). The results of this analysis indicate that both employers and paid employees with supervisory roles (managers) are significantly more satisfied with their work overall than non-supervisory paid employees. In particular, compared with non-supervisory paid employees, we observe a 27% increase in the probability of being satisfied with work in case of employers, which rises to 30% for managers. Although smaller, the difference is also substantial when comparing own-account workers with paid employees without supervisory roles (approximately 13%).

When controlling for procedural-oriented aspects of work content and context (model 7), we first observe that the difference in the probability of being satisfied with work between employers and non-supervisory paid employees is substantially reduced from 27% to approximately 11% but is still significant, which confirms our hypothesis 4. Similarly, when comparing managers with non-supervisory paid employees, the difference in chances of being satisfied with work also decreases from approximately 30% to 18%. Further, the difference in the chances of being satisfied between own-account workers and non-supervisory paid employees (approximately 13% in model 6) fully disappears. These results suggest that not only employers and own-account workers but also managers enjoy substantially higher utility derived from work content and context than non-supervisory paid employees. Thus, while procedural aspects of work content and context fully account for the higher levels of work satisfaction of own-account workers compared to non-supervisory paid employees, such aspects do not entirely explain satisfaction differences between both employers and managers versus non-supervisory paid employees. This is in line with earlier studies that suggest that individuals working at higher levels of an organizational hierarchy have greater job control, which can have positive outcomes in terms of wellbeing resulting from procedural work aspects (Marmot et al., 1997).

The results described above indicated that employers enjoy significantly higher outcome utility than own-account workers (model 2), which confirms hypothesis 5a. To test whether employers derive higher satisfaction from work than own-account workers even when controlling for procedural and outcome utility – which could indicate that employers derive additional satisfaction from directing others – we include satisfaction with outcome-oriented and procedural-oriented aspects in one model (model 8) and then compare work satisfaction differences between employers and own account workers. It can be observed that after accounting for outcome and procedural aspects of work, the probability of employers being satisfied with work is approximately 6% higher, compared to own-account workers. This difference is smaller than that obtained when procedural-oriented aspects were accounted for (models 3 to 5) and similar to that obtained when only outcome-oriented aspects were considered (model 2). Hence, this figure supports that employers enjoy higher outcome utility than own-account workers and suggests that both groups enjoy similar utility derived from work content and context. These results indicate that hypotheses 5b and 5c are not supported. Further, the fact that the difference is still positive and significant after accounting for outcome and procedural aspects of work confirms hypothesis 5d and could indicate that, compared to own-account workers, employers derive additional procedural utility from directing others.

#### *Fixed-effects estimates*

Table 5 presents results using fixed-effects estimates. These results are used to address the concern that own-account workers and, in particular, employers are composed of individuals having a natural tendency to be more satisfied with their work or differ in other aspects that cannot be observed from paid employees. If this is the case, the observed differences in overall work satisfaction between the two groups of self-employed and paid employees, as well as between employers and own account workers, reflect unobserved personality differences between the different occupational groups.

--- Insert Table 5 about here ---

We first compare satisfaction with work of individuals when they are employers, own-account workers and paid employees (model 1 of Table 5). The results indicate that people are more satisfied with their work when they are employers or own-account workers than when they are employees. When comparing satisfaction of individuals when they are employers and own-account workers, no significant differences emerge. This suggests that there are unobserved differences between employers and own-account workers that explain why employers are more satisfied overall with their work. Thus, although employers are on average more satisfied with their work than own-account workers and they enjoy higher levels of outcome utility as our generalized ordered logit estimations have shown, this merely reflects unobserved personality differences between the two groups. Hence, own-account workers will not achieve a higher level of work satisfaction by taking on employees.

Finally, we also ran fixed-effects estimations distinguishing employees with a supervisory role from those without such a role (model 2 of Table 5). It can be observed that employers are more satisfied than own-account workers have similar work satisfaction levels to employees with supervisory roles. This suggests that the result that both groups of self-employed are less satisfied with their work that was obtained using ordered logit estimations (models 6 and 7 of Table 4) is due to unobserved differences between employers and own-account workers on the one hand and supervisory employees on the other hand. The results also indicate that employees with non-supervisory roles are significantly less satisfied with their work than all other groups of workers in line with our ordered logit results. Hence, the work satisfaction difference between employees with non-supervisory roles and the other labor groups is not (fully) the result of unobserved personality differences between the groups.

## **5. CONCLUSION AND DISCUSSION**

This paper has investigated the extent of work satisfaction of self-employed and paid employees. We distinguish employers from own-account workers within the group of self-employed, which we consider relevant for work satisfaction because employers are not only independent actors like the own-account workers but also enjoy autonomy and control associated with operating at the top of a hierarchy. This provides room to delegate work to others but also to give meaning or be meaningful to

the work of others. While both own-account workers and employers are significantly more satisfied with their work than paid employees, the difference in work satisfaction is much larger for employers versus paid employees than between own-account workers and paid employees. Our fixed-effects regressions further confirm that when paid employees switch to self-employment (by becoming an employer or own-account worker), this significantly increases their work satisfaction, indicating that the satisfaction difference between the self-employed and paid employees does not stem from happier people selecting into self-employment or unobserved personality differences.

We demonstrate that the self-employed not only derive higher utility than paid employees from their work content but also from their work context. Hence, self-employment may be an important option for individuals wishing to change their working circumstances to their advantage. Procedural aspects of work in terms of content and context completely explain the higher levels of work satisfaction of own-account workers compared to paid employees. Thus, the independence and control from being self-employed provide them with more procedural utility than paid employees enjoy operating under a hierarchy. Combined with the results of the fixed-effects techniques, these results suggest that paid employees aiming for more rewarding work content or an improved working environment may be better off when opting for self-employment.

Procedural utility in terms of work content and work context, however, does not fully explain the work satisfaction difference of employers with paid employees. This suggests that there are other aspects or advantages associated with being an employer compared to being a paid employee that explain why employers have higher levels of work satisfaction than paid employees. One possible explanation is that employers derive procedural utility from directing others because this may contribute to an individual's need for relatedness and to self-determination. When we distinguish employees with a supervisory role from those without such a role, we find that both employers and paid employees with a supervisory role are significantly more satisfied with their work than paid employees (even when controlling for procedural aspects of work). These results suggest that individuals possibly derive utility from being someone's boss or having control over others.

Employers much more resemble creative and dynamic entrepreneurship than own-account workers (Mandelman & Montes-Rojas, 2009), who are often driven by necessity considerations (Congregado, Golpe & Carmona 2010; Congregado, Golpe & Parker 2012; Mandelman & Montes-Rojas, 2009; Román et al. 2013). Evidence emerges supporting that segmentation within the self-employment sector between employers and own-account workers plays a substantial role in determining work satisfaction levels because we find that being an employer significantly increases the probability of a self-employed individual to be satisfied with their work. Although employers enjoy similar procedural utility from their work compared to own-account workers, some aspects of outcome utility (i.e., satisfaction with earnings and with job security) partly account for the differences in work satisfaction between employers and own-account workers. Thus, employers enjoy more outcome utility than own-account workers in terms of earnings and work security. The higher level of work satisfaction of employers compared to own-account workers is not, however, fully explained by the higher outcome utility that employers enjoy. An additional work satisfaction premium seems to exist for employers. Based on our study, we suspect that the utility derived from directing others also plays a role in explaining satisfaction differences between employers and own-account workers.

Furthermore, our fixed-effects estimations reveal that the work satisfaction of own-account workers does not increase after they become employers. Hence, our study suggests that some individuals derive higher satisfaction from own-account work, while others prefer to be employers and that own-account workers will not become more satisfied by becoming employers. Only certain individuals are able to derive the advantages associated with being an employer, and own-account workers in general may not be better off by becoming employers. Our results may reflect the differences in ability between employers and own-account workers as suggested by prior studies. Theoretical models, for example, assume that employers have a higher level of (entrepreneurial) ability than the solo self-employed (De Wit, 1993). The solo self-employed include a large number of individuals with little entrepreneurial ability who would have preferred to be in wage employment instead (Wiggins, 1995). It has been confirmed that a negative self-selection for own-account workers exists in terms of entrepreneurial



ability and that there is segmentation in the self-employment sector between employers and own-account workers when taking into account the unobserved ability of individuals (Mandelman & Montes-Rojas, 2009). The choice of labor market state in terms of paid employment versus self-employment depends on expected utility (Evans & Jovanovic, 1989; Evans & Leighton, 1989; Taylor, 1996; Taylor, 1999). This also applies to the state of own-account worker versus being an employer. The self-employed will only decide to hire one or more employees when the expected marginal benefits of having employees are higher than the expected marginal costs. As part of this cost-benefit analysis, the expected benefits and costs of alternatives to hiring employees, e.g., the option to cooperate with other self-employed instead, are also considered. Expected utility from becoming an employer may not be higher for an own-account worker than from remaining an own-account worker.

We investigated the role of procedural- and outcome-oriented work aspects for determining work satisfaction levels, and it could also be interesting to investigate the role of such aspects for life satisfaction. While there is an extensive literature on the work satisfaction of the self-employed, much less is known about their life satisfaction. There is some cross-sectional evidence suggesting that the self-employed report higher levels of life satisfaction than the paid employed (Blanchflower & Oswald, 1998; Alesina, Di Tella, & MacCulloch, 2004; Andersson 2008) and that a switch from paid employment to self-employment enhances life satisfaction (Binder & Coad, 2013). That entrepreneurs report higher levels of work satisfaction does not necessarily imply that they will have higher levels of life satisfaction (Binder & Coad, 2013). Work satisfaction may also come at the expense of life satisfaction because an extensive focus on one's work leaves less time for other activities such as leisure, spending time at home or taking care of children.

Our study confirms that it may be too crude to compare self-employed and paid employees in general. Future studies could build on this by making comparable subgroups of self-employed and paid employees (Binder & Coad, 2013). One relevant occupational distinction could be based on educational or skill level. Occupations requiring high skills differ in many respects from occupations requiring low skills, e.g., in terms of challenges offered. High-skilled work is likely to correlate positively with intrinsic motivation, promotion opportunities, and intellectual challenges and hence to provide more flow compared to low-skilled work. Thus, one could expect high-skilled workers to have higher levels of work satisfaction than low-skilled workers. Intrinsic satisfaction, such as that derived from the freedom to plan your work and opportunities to use your skills, is of particular importance to skilled workers for determining work satisfaction (Gruenberg, 1980). Hence, it could make sense to compare work satisfaction levels among employers, own-account workers and employees with similar skill levels.

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## TABLES

**Table 1.** Prevalence of different labor market statuses

	Employers	Own-account workers	Paid employment with supervisory role	Paid employment with non-supervisory role
Austria	11.8%	7.7%	71.2%	9.3%
Belgium	11.4%	5.5%	71.0%	12.1%
Denmark	6.8%	4.7%	72.7%	15.8%
Finland	10.4%	20.0%	59.1%	10.5%
France	2.5%	3.2%	80.0%	14.3%
Germany	7.4%	3.2%	79.2%	10.3%
Greece	21.6%	29.4%	46.6%	2.4%
Ireland	10.5%	16.3%	63.7%	9.4%
Italy	25.0%	10.0%	59.3%	5.8%
Luxembourg	11.1%	2.8%	76.5%	9.7%
Netherlands	1.4%	6.1%	81.0%	11.5%
Portugal	12.7%	15.1%	69.5%	2.8%
Spain	8.9%	16.4%	68.8%	5.9%
United Kingdom	18.7%	20.7%	55.1%	5.5%
<b>All sample</b>	12.3%	12.9%	67.0%	7.7%

**Table 2.** Overall satisfaction with work

	All self-employment		Employers		Own-account workers		All paid employment		Paid employment with non-supervisory role	Paid employment with supervisory role		
Austria	2.51	(59.0%)	2.51	(58.8%)	2.51	(59.2%)	2.68	(71.4%)	2.67	(70.1%)	2.80	(81.5%)
Belgium	2.56	(62.3%)	2.57	(62.6%)	2.56	(61.8%)	2.49	(55.7%)	2.46	(53.4%)	2.67	(69.4%)
Denmark	2.80	(81.7%)	2.82	(83.7%)	2.77	(78.8%)	2.71	(73.3%)	2.69	(71.6%)	2.80	(81.0%)
Finland	2.58	(61.2%)	2.64	(66.6%)	2.55	(58.5%)	2.53	(57.4%)	2.50	(54.5%)	2.73	(73.5%)
France	2.56	(62.3%)	2.54	(60.1%)	2.57	(64.1%)	2.45	(51.1%)	2.43	(49.1%)	2.60	(62.6%)
Germany	2.61	(65.6%)	2.66	(68.3%)	2.52	(59.5%)	2.42	(48.1%)	2.40	(45.9%)	2.62	(64.3%)
Greece	2.05	(21.6%)	2.14	(26.5%)	1.99	(18.1%)	2.06	(21.6%)	2.03	(19.6%)	2.56	(59.5%)
Ireland	2.66	(68.4%)	2.69	(71.6%)	2.64	(66.4%)	2.50	(55.9%)	2.48	(54.0%)	2.65	(69.0%)
Italy	2.35	(45.0%)	2.39	(47.4%)	2.26	(39.2%)	2.21	(35.0%)	2.18	(32.8%)	2.54	(57.3%)
Luxembourg	2.67	(68.6%)	2.67	(68.6%)	2.66	(68.6%)	2.60	(64.3%)	2.58	(63.1%)	2.73	(73.8%)
Netherlands	2.71	(73.8%)	2.67	(70.3%)	2.72	(74.6%)	2.65	(67.2%)	2.65	(66.7%)	2.70	(71.1%)
Portugal	2.14	(21.1%)	2.24	(28.3%)	2.05	(15.1%)	2.14	(20.2%)	2.13	(19.5%)	2.37	(38.8%)
Spain	2.44	(52.1%)	2.54	(59.7%)	2.38	(48.1%)	2.35	(46.4%)	2.33	(44.8%)	2.60	(64.7%)
United Kingdom	2.47	(51.6%)	2.53	(57.8%)	2.42	(46.0%)	2.38	(46.8%)	2.36	(45.8%)	2.50	(57.1%)
<b>Unweighted average</b>	2.51	(56.7%)	2.54	(59.3%)	2.47	(54.1%)	2.44	(51.0%)	2.42	(49.3%)	2.63	(66.0%)

*Notes:* Percentage of observations reporting high satisfaction levels (S = 3) in parentheses.

**Table 3.** Descriptive statistics

	All self-employment	Employers	Own-account workers	All paid employment	Paid employment with non-supervisory role	Paid employment with supervisory role
<b>Number of observations</b>	48,481	23,642	24,839	143,391	128,630	14,761
<b>Number of individuals</b>	14,769	9,169	9,181	45,872	43,386	6,604
<b>Satisfaction with work (y)</b>						
Satisfaction with work = 1	9.0%	7.4%	10.6%	7.5%	8.0%	2.4%
Satisfaction with work = 2	47.7%	45.3%	50.0%	45.0%	46.7%	30.3%
Satisfaction with work = 3	43.3%	47.3%	39.4%	47.5%	45.3%	67.3%
<b>Independent variables (x)</b>						
<i>Demographics</i>						
Female <sup>a</sup>	26.4%	23.6%	29.0%	37.7%	39.6%	21.1%
Age (18-65)	43.9 (10.9)	43.1 (10.7)	44.7 (11.1)	37.1 (10.8)	36.6 (10.9)	41.4 (9.4)
Cohabiting <sup>a</sup>	81.5%	83.0%	80.0%	70.0%	68.3%	84.4%
Number of children under 14 (0-10)	0.63 (0.93)	0.66 (0.93)	0.60 (0.92)	0.60 (0.88)	0.59 (0.87)	0.70 (0.95)
Health status (1-5)	3.99 (0.82)	4.03 (0.79)	3.96 (0.85)	4.06 (0.75)	4.05 (0.75)	4.15 (0.70)
<i>Educational attainment</i>						
Basic education <sup>a</sup>	55.0%	49.4%	60.2%	42.3%	45.2%	16.5%
Secondary education <sup>a</sup>	30.1%	33.3%	27.1%	40.6%	40.2%	44.4%
Tertiary education <sup>a</sup>	14.9%	17.2%	12.7%	17.1%	14.6%	39.1%
<i>Job characteristics</i>						
Earnings from work (PPP €)	€1,362 (23,117)	€13,807 (31,018)	€9,035 (10,779)	€12,661 (9,330)	€11,468 (7,784)	€23,056 (14,042)
Job tenure (years; 1-24)	12.2 (7.1)	12.1 (7.0)	12.3 (7.1)	8.6 (6.9)	8.3 (6.8)	11.3 (6.9)
Weekly working hours (1-96)	50.6 (14.9)	51.2 (14.1)	50.1 (15.6)	39.8 (8.6)	39.3 (8.4)	44.5 (8.8)
Micro firm (1-4 employees) <sup>a, b</sup>		76.2%		17.0%	18.0%	8.7%
Small firm (5-19 employees) <sup>a, b</sup>		18.0%		26.5%	27.0%	21.4%
Medium firm (20-49 employees) <sup>a, b</sup>		3.2%		16.1%	16.1%	16.7%
Large firm (>49 employees) <sup>a, b</sup>		2.6%		40.4%	38.9%	53.2%
Agricultural sector <sup>a</sup>	29.2%	19.0%	38.9%	3.0%	3.2%	1.5%
Construction sector <sup>a</sup>	10.9%	14.8%	7.2%	32.6%	32.4%	33.8%
Industrial sector <sup>a</sup>	10.7%	13.5%	8.1%	11.1%	11.3%	9.4%
Services sector <sup>a</sup>	49.2%	52.7%	45.8%	53.3%	53.0%	55.4%
<i>Satisfaction with outcome aspects</i>						
Job satisfaction with security at work (1-3)	2.25 (0.69)	2.31 (0.68)	2.20 (0.70)	2.34 (0.69)	2.31 (0.69)	2.58 (0.60)
Job satisfaction with earnings (1-3)	1.92 (0.65)	2.01 (0.64)	1.84 (0.64)	2.10 (0.66)	2.06 (0.66)	2.40 (0.62)
<i>Satisfaction with procedural aspects of work content</i>						
Job satisfaction with type of work (1-3)	2.44 (0.63)	2.49 (0.61)	2.39 (0.65)	2.46 (0.62)	2.43 (0.63)	2.71 (0.50)
Adequately matched (Not better skilled) <sup>a</sup>	57.9%	55.7%	59.9%	46.2%	46.9%	40.8%
<i>Satisfaction with procedural aspects of work context</i>						
Job satisfaction with working conditions (1-3)	2.38 (0.65)	2.43 (0.64)	2.34 (0.66)	2.40 (0.64)	2.38 (0.64)	2.58 (0.59)
Job satisfaction with distance to work (1-3)	2.56 (0.62)	2.54 (0.63)	2.57 (0.61)	2.42 (0.67)	2.42 (0.67)	2.50 (0.68)

Notes: Standard deviations for continuous explanatory variables in parentheses.

<sup>a</sup> Dummy variable.

<sup>b</sup> Variables capturing firm size are not included in our estimations since they equal 0 for own-account workers and, hence, their inclusion distort our results as regards our main explanatory variables.

**Table 4.** Overall satisfaction with work –*Generalized Ordered Logit estimations*–

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8	
<b>Predicted probability (Satisfaction with work = 3)</b>	0.4549		0.4462		0.4180		0.4406		0.4110		0.4554		0.4114		0.4095	
<b>Independent variables (x)</b>	$\frac{dy}{dx}$ y %	t-stat.	$\frac{dy}{dx}$ y %	t-stat.	$\frac{dy}{dx}$ y %	t-stat.	$\frac{dy}{dx}$ y %	t-stat.	$\frac{dy}{dx}$ y %	t-stat.	$\frac{dy}{dx}$ y %	t-stat.	$\frac{dy}{dx}$ y %	t-stat.	$\frac{dy}{dx}$ y %	t-stat.
<i>Sets of main variables</i>																
Employer <sup>a, b</sup>	13.1	9.08***	4.4	2.88***	12.7	7.71***	12.6	8.12***	12.5	7.28***					5.9	3.47***
Paid employee <sup>a, b</sup>	-9.5	-6.93***	-19.4	-13.6***	-1.0	-0.65	-0.4	-0.27	4.0	2.60***					-6.0	-3.77***
Own-account worker <sup>a, b</sup> (ref.)																
Employer <sup>a, b</sup>	22.6	17.0***	23.8	17.2***	13.7	9.28***	13.0	9.14***	8.4	5.47***					12.0	7.64***
Own-account worker <sup>a, b</sup>	9.5	6.93***	19.4	13.6***	1.0	0.65	0.4	0.27	-4.0	-2.60***					6.0	3.77***
Paid employee <sup>a, b</sup> (ref.)																
Employer <sup>a, c</sup>											-3.3	-1.80*	-6.3	-3.14***		
Own-account worker <sup>a, c</sup>											-16.6	-9.15***	-18.6	-9.37***		
Paid employee with non-supervisory role <sup>a, c</sup>											-30.2	-20.9***	-17.5	-10.8***		
Paid employee with supervisory role <sup>a, c</sup> (ref.)																
Employer <sup>a, c</sup>											27.0	20.3***	11.2	7.16***		
Own-account worker <sup>a, c</sup>											13.4	9.73***	-1.7	-1.06		
Paid employee with supervisory role <sup>a, c</sup>											30.2	21.2***	17.7	10.7***		
Paid employee with non-supervisory role <sup>a, c</sup> (ref.)																
<i>Demographic characteristics</i>																
Female <sup>a</sup>	-2.4	-2.64***	-3.2	-3.29***	-1.9	-1.90*	-7.6	-7.98***	-5.2	-5.10***	-1.5	-1.58	-4.6	-4.51***	-4.6	-4.38***
Age (18-65)	0.3	6.06***	0.3	6.53***	0.1	1.38	0.1	2.42**	0.0	-0.20	0.2	4.68***	0.0	-0.92	0.0	0.89
Cohabiting <sup>a</sup>	4.5	4.69***	2.2	2.19**	3.6	3.32***	6.1	6.04***	4.9	4.47***	3.8	3.95***	4.5	4.08***	3.0	2.67***
Number of children under 14 (0-10)	-1.7	-3.79***	-0.7	-1.52	-1.9	-3.75***	-1.4	-2.98***	-1.7	-3.28***	-1.8	-4.06***	-1.8	-3.42***	-1.2	-2.19**
Health status (1-5)	23.2	44.4***	17.7	31.6***	-19.6	33.0***	18.7	33.8***	17.3	28.4***	22.9	43.9***	17.1	28.2***	14.2	22.8***
<i>Formal education</i>																
Basic education <sup>a</sup> (ref.)																
Secondary education <sup>a</sup>	8.7	9.69***	6.8	7.21***	3.4	3.35***	5.1	5.37***	2.1	2.00**	7.2	8.00***	1.3	1.19	1.1	0.99
Tertiary education <sup>a</sup>	18.3	15.2***	12.1	9.48***	10.9	8.16***	13.3	10.4***	8.9	6.51***	13.9	11.4***	6.4	4.63***	4.1	2.94***
<i>Job characteristics</i>																
Earnings from work (natural logs)	1.6	12.5***	-0.1	-0.75	1.1	7.08***	1.8	13.3***	1.3	8.50***	1.5	11.9***	1.3	8.20***	0.2	0.99
Job tenure (1-24)	0.3	4.40***	-0.3	-4.67***	0.1	1.17	0.3	4.02***	0.1	1.33	0.3	3.59***	0.1	0.93	-0.3	-3.08***
Working hours (1-96)	0.3	8.72***	0.2	4.55***	0.1	1.31	0.4	9.42***	0.1	3.11***	0.2	6.33***	0.1	1.89*	0.1	1.55
<i>Satisfaction with outcome aspects</i>																
Job satisfaction with security at work (1-3)			49.7	81.4***											27.3	40.2***
Job satisfaction with earnings (1-3)			57.3	90.2***											48.1	68.0***
<i>Satisfaction with procedural aspects of work content</i>																
Job satisfaction with type of work (1-3)					130.2	166.6***			112.9	137.3***			112.5	136.7***	102.3	118.2***
Adequately matched (Not better skilled) <sup>a</sup>					3.8	4.72***			3.5	4.28***			3.7	4.46***	0.3	0.4
<i>Satisfaction with procedural aspects of work context</i>																
Job satisfaction with working conditions (1-3)							74.0	108.7***	46.7	63.4***			1.5	1.05	37.4	48.8***
Job satisfaction with distance to work (1-3)							20.3	33.4***	14.6	22.2***			-0.012	-0.99	11.1	16.4***
<i>Log pseudolikelihood</i>	-156,617.1		-133,991.3		-126,237.7		-140,439.9		-121,987.0		-156,192.6		-121,894.3		-113,342.86	

Notes: No. observations 191,872; No. individuals 57,857; Business sector, country and year dummies included in all regressions; \* 0.1 > p ≥ 0.05; \*\* 0.05 > p ≥ 0.01; \*\*\* p < 0.01; <sup>a</sup> Dummy variable; <sup>b</sup> Models 1-5 and 8 have been estimated twice. Own-account workers are our reference category first, whereas paid employees are our reference later on; <sup>c</sup> Models 6-7 have been estimated twice. Paid employees with supervisory role are our reference category first, whereas paid employees with non-supervisory role are our reference later on.

**Table 5.** Overall satisfaction with work –Fixed-effects estimations–

	Model 1		Model 2	
Predicted satisfaction with work	4.2672		4.2672	
Independent variables (x)	$\frac{dy}{dx} \%$ y	t-stat.	$\frac{dy}{dx} \%$ y	t-stat.
<b>Sets of main variables</b>				
Employer <sup>a, b</sup>	0.2	0.76		
Paid employee <sup>a, b</sup>	-3.4	-7.70***		
Own-account worker <sup>a, b</sup> (ref.)				
Employer <sup>a, b</sup>	3.6	8.46***		
Own-account worker <sup>a, b</sup>	3.4	7.70***		
Paid employee <sup>a, b</sup> (ref.)				
Employer <sup>a, c</sup>			0.9	1.76*
Own-account worker <sup>a, c</sup>			0.6	1.15
Paid employee with non-supervisory role <sup>a, c</sup>			-3.2	-10.1***
Paid employee with supervisory role <sup>a, c</sup> (ref.)				
Employer <sup>a, c</sup>			4.1	9.51***
Own-account worker <sup>a, c</sup>			3.8	8.61***
Paid employee with supervisory role <sup>a, c</sup>			3.2	10.1***
Paid employee with non-supervisory role <sup>a, c</sup> (ref.)				
<b>Demographic characteristics</b>				
Female <sup>a</sup>				
Age (18-65)	0.2	5.28***	0.2	5.04***
Cohabiting <sup>a</sup>	-0.02	-0.06	-0.05	-0.16
Number of children under 14 (0-10)	-0.2	-1.22	-0.2	-1.32
Health status (1-5)	-2.9	-27.9***	2.9	27.9***
<b>Formal education</b>				
Basic education <sup>a</sup> (ref.)				
Secondary education <sup>a</sup>	0.7	2.34**	0.7	2.31**
Tertiary education <sup>a</sup>	1.5	2.99***	1.4	2.91***
<b>Job characteristics</b>				
Earnings from work (natural logs)	0.2	8.3***	0.2	8.20***
Job tenure (1-24)	-0.5	-19.0***	-0.5	-19.2***
Working hours (1-96)	0.04	4.72***	0.04	4.32***

*Notes:* No. observations 191,872; No. individuals 57,857; Business sector and year dummies included in all regressions; Dummy for gender and country dummies excluded due to lack of variability across time; \*  $0.1 > p \geq 0.05$ ; \*\*  $0.05 > p \geq 0.01$ ; \*\*\*  $p < 0.01$ ; <sup>a</sup> Dummy variable; <sup>b</sup> Model 1 has been estimated twice. Own-account workers are our reference category first, whereas paid employees are our reference later on; <sup>c</sup> Model 2 has been estimated twice. Paid employees with supervisory role are our reference category first, whereas paid employees with non-supervisory role are our reference later on.

# Appendix

**Table A1:** Variable description table

Variable	Description
	<b>Dependent variables</b>
Satisfaction with work	Dependent variable varies from 1 to 3 showing a scale of satisfaction with work. Thus, this variable equals 1 for individuals who are not satisfied with work and 3 for satisfied individuals.
	<b>Independent variables</b>
<i>Main variables</i>	
Employer	Dummy equals 1 for employers.
Own-account worker	Dummy equals 1 for own-account workers.
Paid employee	Dummy equals 1 paid employees in the private sector.
Paid employee with supervisory role	Dummy equals 1 for paid employees who do have a supervisory role.
Paid employee with non-supervisory role	Dummy equals 1 for paid employees who do not have a supervisory role.
<i>Demographic characteristics</i>	
Female	Dummy equals 1 for females. This variable is omitted in our fixed effects regressions.
Age (18-65)	Age of the individual, ranging from 18 to 65.
Cohabiting	Dummy equals 1 for cohabiting individuals.
Number of children under 14 (0-10)	Number of children aged under 14 living in the household.
Health status (1-5)	Variable ranging from 1 to 5; the scale refers to the level of health and equals 1 for individuals whose health is very bad and 5 for individuals whose health is very good.
<i>Education</i>	
Basic education ( <i>ref.</i> )	Dummy equals 1 for individuals with less than second stage of secondary level education (ISCED 0-2).
Secondary education	Dummy equals 1 for individuals with second stage of secondary level education (ISCED 3).
Tertiary education	Dummy equals 1 for individuals with recognized third level education (ISCED 5-6).
<i>Job characteristics</i>	
Earnings from work (natural logs)	Work incomes earned during period $t-1$ , converted to average € of 1996, being corrected by Purchasing Power Parity (across countries) and Harmonised Consumer Price Index (across time). This variable is expressed in natural logarithms.
Job tenure (1-24)	Number of years in present job.
Working hours (1-96)	Hours of work per week.
Business sector dummies	18 dummies equalling 1 for individuals whose codes of main activity of the local unit of the business, by means of the Nomenclature of Economic Activities (NACE-93), are the following: A+B ( <i>ref.</i> ) Agriculture, hunting and forestry, fishing. C+E Mining and quarrying + Electricity, gas and water supply. DA Manufacture of food products, beverages and tobacco. DB+DC Manufacture of textiles, clothing and leather products. DD+DE Manufacture of wood and paper products; publishing and printing. DF-DI Manufacture of coke, refined petroleum/chemicals/rubber/plastic and other non-metallic mineral products. DJ+DK Manufacture of metal products, machinery and equipment. DL-DN Other manufacturing. F Construction G Wholesale and retail trade; repair of motor vehicles, motorcycles and personal/household goods. H Hotels and restaurants. I Transport, storage and communication.



J Financial intermediation.  
 K Real estate, renting and business activities.  
 L Public administration and defence; compulsory social security.  
 M Education.  
 N Health and social work.  
 O-Q Other community, social and personal service activities; private households with employed persons; extra-territorial organizations and bodies.

*Satisfaction with outcome aspects*

Job satisfaction with security at work (1-3) Variable ranging from 1 to 3 showing a scale of job satisfaction with present job in terms of job security. Thus, this variable equals 1 for individuals who are not satisfied with their present job in terms of job security and 3 for satisfied individuals.

Job satisfaction with earnings (1-3) Variable ranging from 1 to 3 showing a scale of job satisfaction with present job in terms of earnings. Thus, this variable equals 1 for individuals who are not satisfied with their present job in terms of earnings and 3 for satisfied individuals.

*Satisfaction with procedural aspects of work content*

Job satisfaction with type of work (1-3) Variable ranging from 1 to 3 showing a scale of job satisfaction with present job in terms of type of work. Thus, this variable equals 1 for individuals who are not satisfied with their present job in terms of type of work and 3 for satisfied individuals.

Adequately matched (Not better skilled) Dummy equals 1 for individuals who do not feel they have the skills or qualifications to do a more demanding job than the one they have.

*Satisfaction with procedural aspects of work context*

Job satisfaction with working conditions (1-3) Variable ranging from 1 to 3 showing a scale of job satisfaction with present job in terms of working conditions and environment. Thus, this variable equals 1 for individuals who are not satisfied with their present job in terms of working conditions and environment and 3 for satisfied individuals.

Job satisfaction with distance to work (1-3) Variable ranging from 1 to 3 showing a scale of job satisfaction with present job in terms of distance to work and commuting. Thus, this variable equals 1 for individuals who are not satisfied with their present job in terms of distance to work and commuting and 3 for satisfied individuals.

*Macroeconomic variables*

Country dummies 14 dummies equalling 1 for individuals living in the named country: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, and the United Kingdom. These variables are omitted in our fixed effects regressions

Year dummies 8 dummies equalling 1 for observations referring to each of the periods covered by the sample: 1994, 1995, 1996, 1997, 1998, 1999, 2000 and 2001.

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