



School of Management and Department of Economics

The difference in mental well-being between self-employed and employees.

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Acknowledgements

My academic aspirations took me from Brussels to Lisbon. My personal quest and adventure to learn the particulars of the interactions of humans led me from sociology to business. Both sociology and business are broad and have many different topics. But have parallels in labour, economics, trade and many more. During my courses I wanted to focus on these common grounds and make them meet. This article is the encounter between the two, interrelated fields that evolve around similar subjects.

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List of abbreviations

ERI	Effort Reward Imbalance
EWCS	The European Working Conditions Survey
EU	European Union
QOW	Quality of Work
WHO	World Health Organisation
WHO-5	World Health Organisation Five Well-Being Index

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Abstract

With this article we hope to break open a deeper discussion about the differences between self-employed and employees. We answer our research question: Is there a difference in the mental well-being of self-employed and employees? Are the predictors of mental well-being on self-employees' and employees the same?

In order to provide an answer, we use the Effort-Rewards Imbalance (ERI) model as a theoretical framework to understand how the quality of work is associated with mental well-being in self-employed people and employees. As a dataset we use The European Working Conditions Survey (EWCS). Within this dataset we reconstructed the ERI scale and tested our hypotheses using a hierarchical linear regression.

Our results show that self-employed people report better mental well-being when compared to employees. Moreover, our results suggest that the predictors of self-employees' mental well-being are different from the predictors of employees' mental well-being.

Rewards, such as empowerment, career advancement, social support from colleagues and satisfaction with wage, are positively related with employees' mental well-being. The self-employed have only empowerment, social support and wage satisfaction associated with mental well-being.

Efforts like work pace, interruptions, ergonomic risks and emotional strain are negatively related with employees' mental well-being. None of them appear to be detrimental for self-employees' mental well-being. In fact, interruptions even seem to be positively associated with self-employees' mental well-being.

Our results also indicate that the self-employment status interacts with an effort-reward imbalance (an imbalance means higher efforts than rewards at work) in the prediction of participants' self-reported mental well-being.

Abstract (em português)

Com este artigo, esperamos quebrar abrir uma discussão mais aprofundada sobre as diferenças entre trabalhadores independentes e trabalhadores. Nós responder a nossa questão de pesquisa: Existe uma diferença no bem-estar mental dos trabalhadores independentes e? São os preditores de bem-estar mental na auto-empregados e empregados do mesmo?

A fim de dar uma resposta, usamos o modelo Esforço-Rewards Desequilíbrio (ERI) como referencial teórico para entender como a qualidade do trabalho está associado ao bem-estar mental em pessoas auto-empregadas e empregados. Como um conjunto de dados que usamos O Inquérito Europeu sobre as Condições de Trabalho (EWCS). Dentro deste conjunto de dados reconstruímos a escala ERI e testado nossas hipóteses usando uma regressão linear hierárquica.

Nossos resultados mostram que os trabalhadores independentes relatam uma melhor bem-estar mental quando comparados aos trabalhadores. Além disso, nossos resultados sugerem que os preditores de auto-empregados de bem-estar mental são diferentes dos preditores de funcionários de bem-estar mental. Enquanto recompensas, como a emancipação, a progressão na carreira, o apoio social dos colegas e satisfação com o salário, estão positivamente relacionados com o bem-estar mental dos empregados, para a auto-funcionários só capacitação, apoio social e de satisfação dos salários parecem estar associados com o bem-estar mental, ser. Além disso, esforços como ritmo de trabalho, interrupções, riscos ergonômicos e tensão emocional está negativamente relacionado com os funcionários 'bem-estar mental, nenhum deles parece ser prejudicial para a auto-empregados de bem-estar mental. Na verdade, as interrupções mesmo parecem estar associados positivamente com o bem-estar mental dos auto-empregados. Nossos resultados também indicam que o estado auto-emprego interage com o esforço-recompensa desequilíbrio (perceber a existência de esforços mais elevados do que recompensas no trabalho) na predição de auto-relato bem-estar mental dos participantes. Observou-se que as recompensas que anularia o efeito negativo dos esforços para trabalhadores independentes.

Introduction

In the paper, we explore what the differences are between self-employed and employees' mental wellbeing. We focus on their level of self-reported mental well-being and also on its predictors.

The idea behind this article came out of our notice that entrepreneurship is being highly encouraged around us and we want to know what the effects of choosing wage-employment or self-employment are on the mental well-being.

Self-employment is encouraged by our government, in our daily life routines and on social media. From a government perspective, political decision-making in Europe has in general a neo-liberal view on economics which favours entrepreneurs. They are seen as the 'guardians of the market economy' and are 'agents of structural change' (Marttila, 2012 p. 189). This results in promoting entrepreneurship with the Entrepreneurship 2020 Action Plan, where one of the focusses is to include entrepreneurial skills in school curricula (DG Enterprise and Industry Unit D.1, 2012). In daily life, it happened at least once to be confronted with the idea to engage in entrepreneurship. Social media articles about tips and trick on how to become or how to be an entrepreneur are wide spread. We can find these articles on social media on Facebook, Twitter or other websites such as Investopedia, Harvard Business Review, Bloomberg, etc.

We structure the article in three main parts. Firstly, in the literature study, we explain our four concepts: (1) How we define self-employed and employees; (2) How we understand mental well-being, what are the challenges;(3) How the efforts-rewards imbalance model (ERI) from Johannes Siegrist to theoretically frame our research. (4) We split up the efforts-reward imbalance model to get an in-depth understanding of the influences of the efforts on mental well-being and the rewards on mental well-being. Out of those four concepts we derive our hypotheses.

Secondly, we used the European Working Conditions Survey (EWCS) 2010 database, a database from the Eurofound organisation, to test our predictions. This allows us to measure the influences of (1) efforts on mental well-being and (2) rewards on mental well-being and (3) an effort-reward imbalance on mental well-being. We use a linear regression analysis and a hierarchical linear regression analysis. With these measurements we answer our hypotheses and our research question.

In the third and last part we connect the concepts from our literature study with our results. We conclude what the influences are on mental well-being, the differences between a self-employed and an employee and, explain our syntheses derived from the results.

Literature Review

Entrepreneurs and Employees

Employees and self-employed are distinguished based on wage-relationship. An employee is doing a job whilst being paid by an employer. A self-employed has no employer and decides his or her own pay; nonetheless he or she might be an employer to others.

Though, the line between being a self-employed and an employee has become more and more unclear. Over the last years we see that it has become harder to state a standard employee and a standard self-employed. A standard employee contract includes a physical workplace, a fixed contract with the employer and defined work-times. Employment has become less standardized (Ashford et al. 2007). We see employees having jobs that look like jobs of a self-employee and vice-versa.

Also the choice of employment is not detrimental. Employees do not stay employees all the time, but instead are 'managing their careers'. We see employees using the flexibility of changing jobs in order to work for different employers or, to find new challenges as a self-employed themselves. During a lifetime, one might be for a period a self-employee or an employee (Gaile, 2014).

This dissertation will discuss the effects of efforts and rewards on the mental well-being of self-employed people versus employees. Since there is a lack of literature comparing self-employed with employees regarding the effects of what is generally considered an effort factor and a reward for an employee, we will analyse how efforts and rewards influence mental well-being, comparing employees and self-employed people.

Mental well-being

In general, each individual shall react differently on work related influences, based on their background and past experiences. This leads us to think more in a funnel-view on mental well-being. The choice of becoming an employee or self-employed is not always a result of an individual reasoning. There are external factors that can influence an individual decision, factors such as (a) macro- economic situation, (b) the government policy, (c) social environment, and (d) institutional characteristics such as access to knowledge (Vanroelen, et al. 2004, p. 13).

We look at mental well-being as an evaluation of life, which can be positive or negative. It is a broad concept that covers experiences and emotions at work or in personal live.

Positive experiences are career advancement, good social contacts, etc.... Negative experiences can be the loss of a job, arguments at work, etc.... Positive and negative emotions are the feelings associated to these experiences. Emotions and experiences are associated with life-satisfaction (Diener & Lucas, 2000; Diener et al. 2002). Life-satisfaction is a measurable dimension of positive and negative emotions and experiences. We can define the mental well-being if we let the respondent evaluate their life-satisfaction by asking them about experiences and the emotional state (Diener & Ryan, 2009).

Researchers have already found that there is a significant positive relationship between being self-employed and subjective well-being (e.g., Blanchflower & Oswald, 1998; Binder & Coad, 2013; Crum & Chen, 2015). In fact, Crum and Chen (2015) have shown that self-employed reported higher levels of life satisfaction and happiness than those people working for someone else, because they decide for themselves as they are their own boss. Therefore, we expect to find this positive relationship between self-employment status and mental well-being in our international sample.

Hypothesis 1: self-employment status is positively associated with the self-reported mental well-being of the individual.

Quality of Work

There are many ways how we can describe what a good or a bad job is. These descriptions can be abstract or concrete. We can describe the quality of work in an abstract way as the difference between how one feels about his or her job. A good job is what makes you 'happy' and a bad job makes you 'depressed'. A concrete description of quality of work is a stereotypic interpretation of a job type, such as a factory worker compared to a doctor. But this interpretation can narrow the quality of work (QOW) measurement to a good and bad dualism, which is too arbitrary and based on stereotypes and emotions.

Various researches described improved ways of defining the quality of work. In the following pages, we present three most widely used models in defining quality of work: (1) JWES model, (2) the Job-Control Demands model, and (3) the ERI model.

The first model is the JWES-model and focuses on the job content, working conditions, employment conditions and social relationships at work (VandenBrandt et al. 2012). The four job quality dimensions are good indicators where we can post a set of variables in order to have an in-depth understanding of quality of work. Further in the paper we will discuss all the elements of JWES-model.

Job content describes variables for the work organisation related to how the job is: (a) how challenging the job is, (b) the level of autonomy it allows the employee, and (c) whether the tasks are redefined or singular. Working conditions are more related to the work environment, such as: (a) the physical strain, (b) emotional strain, (c) how often the employee comes in contact with dangerous situations, etc. The third dimension of JWES model is the employment conditions dimension. Employment condition relates to (a) the wage, (b) job-security, and (c) extra-legal advantages. The last dimension, the social relations at work harbours variables that tell us more about formal and informal relations. Here we relate to (a) labour unions, (b) personal contacts, (c) hierarchy rules, etc. (VandenBrandt et al. 2012).

The above described dimensions are all part of the JWES-model. Those dimensions describe in detail what we can define as quality of work variables.

Other researchers have proposed parallel models for quality of work, such as Job Control-Demands model from Karasek and Theorell. The Job Control-Demands model focusses more on how job demands interact with the resources available (Karasek & Theorell,

1990). In this model, we can define a stressful job when there are high demands and low control over the job.

The third model is the Effort Reward-Imbalance (ERI) Model from Johannes Siegrist. In our statistical analysis, we used the ERI model as the central reference for defining the quality of work for employees and self-employed.

The ERI model focuses on the balance and respectively the imbalance between efforts and rewards. We will expand further on this quality of work model in the dedicated paragraph on the ERI model.

Multiple studies analysed in detail the effects of quality of work indicators (QOW) on the employees' well-being (Ibrahim & Ohtsuka, 2014; Vanroelen et al. 2009). However, for self-employed, there is little literature analysing the quality of work and effects on the well-being.

This study aims to contribute to the existing literature by comparing the effects of quality of work indicators and their impact level on well-being between self-employed and employees. We focus our analysis on mental well-being and will use variables representing the 'ERI'- effort-rewards imbalance' model as QOW indicator.

The QOW model we choose to understand the mental well-being of employees or self-employed is the Effort-Rewards Imbalance model (ERI). We will use this model to provide insights on the predictors of mental well-being for employees and self-employed people.

Effort Reward Imbalance Model

The strength of the Effort Rewards Imbalance model (ERI) is that it is very intuitional to interpret this model. In the Effort Rewards Imbalance model, Siegrist (2012) describes two main factors at work. Firstly, the efforts you put into your job and secondly the rewards you get from your job. If we would imagine a balance scale and we would place the efforts on a side and the rewards on the other side, we can expect a balance or an imbalance. If there is an imbalance in favour of efforts, then the model would describe a job that is unpleasant. If the imbalance is in favour of the rewards, it would describe a job which is more gratifying. In a short description, it is a cost -benefit analysis of work (de Jonge et al. 2000).

The theory of the ERI model has three main hypotheses: (1) extrinsic ERI, (2) intrinsic ERI (=over-commitment) and, (3) the interaction. The (1) extrinsic ERI hypothesis describes high effort combined with low reward which result increased risk of having health-

related problems. The (2) over-commitment hypothesis states that over-commitment to your job may lead to an increase in health-related problems. And (3) the interaction hypothesis combines the first two hypothesis mentioned above: high effort and low rewards and over-commitment can result in an even more increased risk of having health problems (Siegrist, 1996; Siegrist 2012; Van Vegchel et al., 2005a).

According to this model, the efforts to put into the balance are both psychological as physical (for example interruptions and physical demands) (Siegrist et al., 2013; de Jonge et al., 2000). As well, the research concluded that the rewards can be tangible (such as money, gifts, trainings, etc.) but also intangible (career prospects, emotional support, relationships etc.) (Siegrist, 1996; Siegrist et al. 2013). Throughout his works, Siegrist encourages to consider variables in the ERI framework that measure the effects of social, psychological and physical factors of a job on human health and disease risks.

Following the statement above, we describe the ERI model in the methodology section, considering the set of variables we used to measure the effect of effort and reward on the mental well-being of self-employed and employees. The variables we use in our analysis are closely related to the variables used by Siegrist in his work. The variables we use are retrieved from the European Working Conditions Survey, as described in detail in the methodology section.

Relationship between efforts and workers' well-being

We can define efforts in two ways: (1) there is effort which is simply using your mind and body; and there is (2) effort that is exerting yourself over your physical and emotional limits. Within the ERI theory, the focus lies on the second definition of effort. Exerting yourself can lead to physical problems such as heart disease, a long exposure to physical and emotional effort increases the risk of heart failures and other cardiovascular diseases (Kuper et al, 2002). The imbalance of your efforts and rewards can reflect feelings of unfairness. These feelings contribute to burnouts, job dissatisfaction and general stress (Ybema, 2008). And can be the aftermath of decreased mental well-being.

Feelings of stress are emotional and physically perceptible. Symptoms range from sleeplessness, forgetfulness, to heart palpitations and sensible emotions. These feelings are reflected in our measurement of mental well-being.

Efforts in our ERI model are represented by work pace, interruptions, ergonomic risks and emotional strain. All those variables have influences on the mental well-being.

The work pace reflects the rhythm of the job. We can define work pace from two different perspectives: (a) work intensity (the amount of work) and the work speed. White collar jobs mostly have work intensity whilst blue collar jobs have work speed. When the pace is too high, poorly designed or ill-equipped working environments would lead to health risks (Fagan & Burchell, 2002).

Unwanted interruptions on the job leads to decreased life satisfaction (Gadermann & Zumbo, 2007). This is especially the case for women according to Erlandsson et al. (2010). According to Fagan and Burchell, women are more interrupted than men during work (2002). These annoyances are not innocent as they lead to hypertension and heart disease (Siegrist, 1996).

Ergonomic risks lead to backaches, over tensed muscles, eyestrain, etc. It is very probable that these effects can contribute to lack of sleep, pain and general discomfort. These ergonomic risks are for both blue -and white collar jobs, but with different causes - such as weight lifting or continuous looking at monitors - (Fagan and Burchell, 2002; Vandenbrande et al., 2013; Duyan et al. 2013; Limborg, 2001).

Emotional strain are the external effects on mental well-being. These effects can be related to the values a person has or over-commitment to the job. As being stated above, this has a direct influence on stress and burnout. These strains deplete energy and lead to decreased mental well-being (Kossek et al, 2014).

Relationship between rewards and workers' well-being

When we make effort, we want to be rewarded for our input. The most common idea is that in labour, we want to be compensated with a monetary reward. Regardless of pay, we need also motivation.

Motivation is an internal reward which can drive someone to handle all the efforts without giving up on them. Motivation itself is an umbrella concept that covers several variables (Noorderhaven, 2003; Mark & Smith, 2008; Van de Ven & Vlerick, 2011). We've grouped the variables under (1) self-motivation and (2) motivation through others.

(1) Self-motivation is the push we have when we feel that finishing a job results in rewards that are positive towards our personal achievements. This is what Noorderhaven (2003) calls self-efficacy, a push to attain goals.

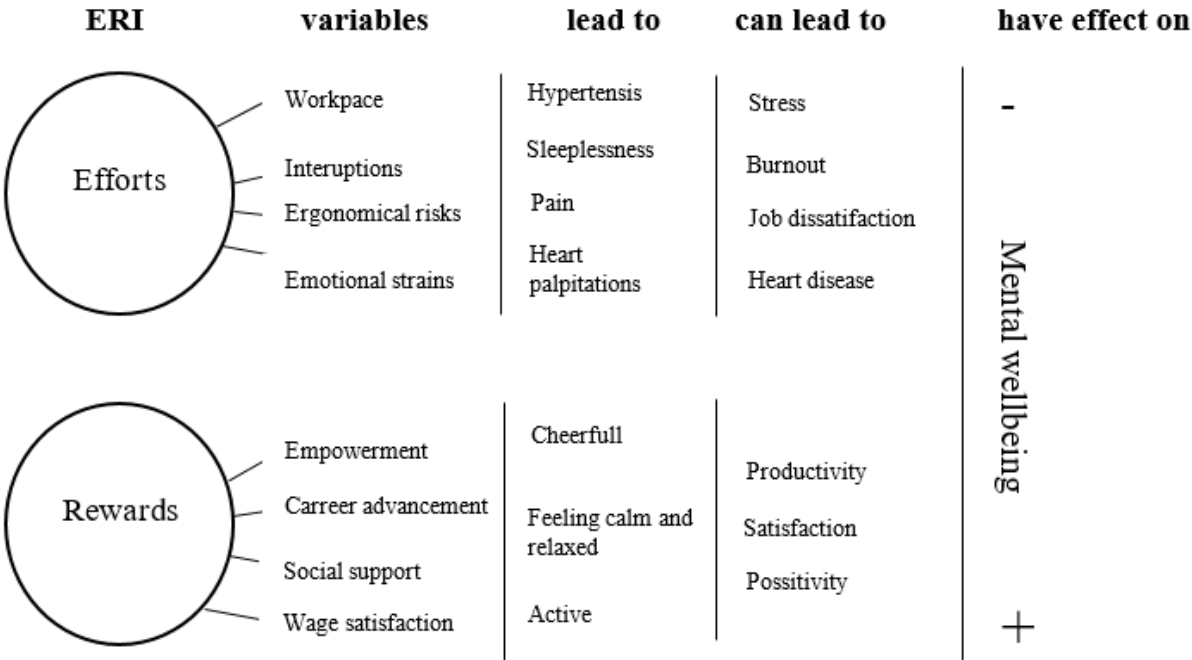
(2) Others can motivate us too; they can revive or create self-motivation. This can be though putting emphasis on morale and loyalty (Bell et al. 2003). By other we refer to work colleagues and boss, family, friends or even a stranger. These motivators are reflected in company policy, the broad social environment or the family circle.

The paragraph on motivation above mentions an internal push of rewards. The next paragraph will expand on external rewards, which are more tangible rewards measured as wage and career advancement. In an ideal meritocratic world, our value would be reflected in wage levels. But in real, life this is not the case. To counter this discrepancy, it is more meaningful to ask the wage satisfaction and make an easy dichotomy between dissatisfaction and satisfaction. Dissatisfaction leads to a myriad of health-related and motivation related issues that are further reflected in mental well-being. Health issues refer to increased chances of cardiovascular disease, stress, sleep deprivation, hypertension, etc. (Kluska, et. al. 2004, Van den Brande et al. 2012, de Bustillo et al., 2009, Vanroelen et al., 2009, Semmer, 2007). In our previous example, we used the most common known reward, wage, but the same logic can be applied to career advancement (or lack thereof). For an employee, it can be promotion, for a self-employed this can be entrepreneurial success and recognition.

When those internal and external rewards are positively stimulated, we can expect an increase in mental well-being.

In the Figure 7.1 we present an overview of the potential mechanisms through which the efforts and rewards that we measured in the present study may affect the well-being of our participants.

Figure 7.1.: Overview of the effects of efforts and rewards.



Our efforts are measured by four variables (1) workpace, (2) interuptions, (3) ergonomical risks and, (4) emotional strains. These can lead to our four symptoms; (1) hyperthensis, (2) sleeplessness, (3) pain and (4) heart palpitations. These are symptoms of physical or mental problems such as (1) stress, (2) burnout, (3) Job dissatisfaction and (4) Heart disease. They will decrease the mental well-being in different degrees.

Our rewards follow the same logic. Rewards are measured by (1) empowerment, (2) career advancement, (3) social support and, (4) Wage satisfaction. This can lead in daily life to (1) cheerfulness, (2) feeling calm and relaxed and, (3) feeling active. They increase (1) productivity, (2) job satisfaction and, (3) overall positivity. These effects will increase mental well-being in various degrees.

In this figure and during the literature, we mention the effect the variables might have on health, nonetheless we do not test these symptoms in our analysis. For example, hypertension is not represented as a variable. We only test the relationship between the efforts and rewards and well-being.

Efforts, Rewards and mental well-being: expected differences between employees and self-employed people.

According to Dijkhuizen et al (2014), “entrepreneurs share certain job demands with employees, but they may also be faced with specific job demands” (p.72). Both employees and self-employed have work pressure, conflicts at work, ergonomic risks. But Dijkhuizen et al. (2014) found that self-employed comes with demands such as having 24/7 availability, having to be fully committed and having to cope with uncertainty because of the higher risks involved with self-employment.

Many articles stressed the advantage of autonomy and being your own boss to the life satisfaction of self-employed (Binder & Coad, 2013; Crum & Chen, 2015; Hundley, 2001). It allows the self-employed to be flexible with life choices but also work efforts (Crum & Chen, 2015; Baron et al, 2013; Benavides, 2000).

Therefore, we could expect that self-employees would also have differences in what concerns the effects of specific efforts and specific rewards when comparing self-employees and people working for someone else (employees). However, there is a lack of comparative research on what regards the predictors of well-being for employees and self-employees. Therefore, our research will be exploratory in the sense that we presuppose that there will be some differences in these predictors when comparing self-employees with employees, but we do not draw any specific hypothesis on the directions of those differences. Thus, we hypothesize that,

Hypothesis 2: self-employment status will interact with both efforts and rewards in predicting self-reported mental well-being.

Effort Reward Imbalance and mental well-being: expected differences between employees and self-employed people

In our previous two chapters we concluded that higher levels of rewards are associated with increased mental well-being and that higher levels of perceived efforts are associated with a decreased mental well-being. Rewards motivate us to do our work and efforts decrease satisfaction. In this chapter we look further into the two extremes an imbalance can have. A

first extreme is an imbalance tipping towards more rewards than efforts, a second is an imbalance tipping towards more efforts than rewards.

The first extreme (1) is more reward than efforts. Previous studies agree that this increases mental well-being (de Jonge et al., 2000; Ostry, 2003; Niedhammer et al. 2004).

Hundley (2001) proposes that self-employed see autonomy, flexibility and job-security as the rewards that increase self-employed mental well-being. The employees get more rewards from organizational support (Eisenberger et al., 1990), recognition (Bowen, 2000) and support from colleagues, supervisors and family (Hayton et al, 2012; Gillet et al., 2013; Bagger & Li, 2014). Therefore, for self-employed, the autonomy is the most important reward, while for employees it is the social aspect.

Our second extreme (2) is the imbalance towards efforts, and is reflected in our measurement as the ERI variable. Here again, the literature agrees that efforts decrease mental wellbeing (Niedhammer et al. 2004, Weyers et al., 2006; Bosma et al. 1998). We explained that stress is an effect of the efforts in the dedicated chapter above. A study of Baron et al. (2013) showed that self-employed and employees have different resistance to stress. Self-employed have higher levels of psychological capital (self-efficacy, optimism, hope and resilience). This is because self-employees have more flexibility in problem solving due to their autonomy and react less emotional to stressors (Schonfeld & Mazzola, 2015).

Thus, we anticipate that the imbalance of the efforts and rewards would have a different influence on self-employed and employees. We expect the self-employed to cope better with an imbalance towards more efforts – when efforts are higher than the rewards received -, since previous studies show a more positive perspective on work stress and more stress-resilience, a higher work satisfaction and, autonomy (Andersson, 2008; Prtatas & Thompson, 2006; Parslow et al. 2004; Hundley, 2001). But, on the other side, the self-employed have an increased risk to become workaholics, which is related to ill physical and mental health (Van den Broeck et al., 2011; Gorgievski et al., 2010; Taris et al, 2008).

Although there is a lack of literature on the efforts-reward imbalance that compare self-employees directly with employees, based on the reported findings, we would expect that self-employment status will interact with efforts-reward imbalance in the prediction of workers' mental well-being. Therefore,

Hypothesis 3: self-employment status will interact with effort-rewards imbalance in predicting individual's self-reported mental well-being.

Methodology

Procedure and sample

In order to analyse the differences in employees and self-employees' well-being, we used the data of the 2010's wave of the European Working Conditions Survey (EWCS). The European Working Conditions Survey is issued by the European Foundation for the Improvement of Living and Working Conditions (Eurofound). Eurofound is an European Union (EU) agency who studies and gives recommendations to improve living and working conditions. This survey is concluded every five years and was first piloted in 1991. The Expert Questionnaire Development Group is responsible for the updates. EWCS evolve around job and employment quality and there are four main themes that it focuses on: (a) Health and well-being, (b) Career and employment security, (c) Skills development, and (d) Reconciliation of working and non-working life.

We adjusted the database so that we only withhold the ages from 15 -until 69 years old. The survey itself is cross-national all over the European Union. This way we make sure all of the possible working population is included. And consist of a total of 32.897 respondents from the following countries:

Belgium	France	Malta	Romania
Bulgaria	Ireland	Netherlands	Slovenia
Czech Republic	Italy	Austria	Slovakia
Denmark	Cyprus	Poland	Finland
Germany	Latvia	Netherlands	Sweden
Estonia	Lithuania	Austria	United Kingdom
Greece	Luxembourg	Poland	
Spain	Hungary	Portugal	

We have within this survey a total of 4982 self-employed (15,3%) and 27.527 employees (84,7%).

Measures

To measure the effect of our quality of work (QOW)- variables on mental well-being, we needed to prepare the dataset so we have a standardized measurement of our effects. The

EWCS consists of approximately 170 items. We have used in total 20 items of this questionnaire.

Mental well-being: For our criterion variable we used the ‘Mental well-being scale’ index, composed of 5 items. This is based on the set of questions from World Health Organisation- Five Well-Being Index (WHO-5). Our dataset already included the items that closely measure (a) feeling vigorous (b) feeling calm, (c) being cheerful, (d) being able to rest well, and (e) being interested in the job.

Table 8.1: Our items versus the WHO-5 official variables.

WHO-5 official items	Our items
feeling vigorous	How you have been feeling over the last two weeks - I have felt cheerful and in good spirits
feeling calm	How you have been feeling over the last two weeks - I have felt calm and relaxed
being cheerful	How you have been feeling over the last two weeks - I have felt active and vigorous
being able to rest well	How you have been feeling over the last two weeks - I woke up feeling fresh and rested
being interested in the job	How you have been feeling over the last two weeks - My daily life has been filled with things that interest me

Our items (table 8.1) were measured using *Likert* scales that had a range of six answer possibilities. They ranged from ‘All of the time’ to ‘At no time’ only needed to be recoded so all the variables end up answering positively to the questions. Then correlations were analysed and a factor analysis was made. Then the mean of the 5 items was calculated to obtain the scale value of each subject. This ended in a scale ranging from one to six. Six is the highest obtainable feeling of positive mental well-being.

Efforts- Rewards Imbalance: Our predictor variables followed a similar procedure (table 8.2.). In order to construct our ERI scale, we needed to start with reordering the Likert scales of the variables, so the positive answers to the question would be coded the last. For example, the question ‘does your job involves tasks that are in conflict with your personal values’ was coded in the EWCS from ‘fairly often’ to ‘occasionally’ to ‘never’. We turned this scale around so we would have from ‘never’ to ‘occasionally’ to fairly often. The next

step was to code the answer possibilities from 0 to 3, this way we made it possible to standardize all the variables. We could do this quickly by dividing the Likert scales by the answer possibilities.

The variables for our effort scale are: (a) working at very high speed, (b) working tight deadlines, (c) How often do you have to interrupt a task you are doing in order to take on an unforeseen task, (d) Tiring or painful positions, (e) Carrying or moving heavy loads, (f) Standing, (g) Your job involves tasks that are in conflict with your personal values, (h) You get emotionally involved in your work, (i) You experience stress in your work.

And for the reward scale: (a) You are consulted before targets for your work are set, (b) You are involved in improving the work organisation or work processes of your department or organisation, (c) You have a say in the choice of your working partners, (d) You can influence decisions that are important for your work, (e) My job offers good prospects for career advancement, (f) Your colleagues help and support you, (g) I have very good friends at work (h) I am well paid for the work I do.

We based ourselves on the theory behind the ERI model of Siegrist to use these variables. As this model is being used by plural researchers, there is no fixed set of survey questions but rather a fixed theorem behind them. The variables and scales selected in the EWCS are our interpretations of the theory reflected in the EWCS study. Below we will clarify how we created the effort and reward scales and which variables they consist of.

After the preparation of the variables, we made the Effort and Reward scales. This we did by counting the all variables from a scale together, divided by the number of variables in the scale. This resulted in a -1 to +1 scale, where 0 is neutral. If the score is negative, there is less imbalance, showing in a positive mental well-being, and when the score is positive, it means there is an imbalance, showing a negative mental well-being the table summarizes this. We also centred 0 as the mean, to decrease multicollinearity and to simplify interpretation.

Table 8.2: Which variables are in the scales?

		Variable	Includes		
ERI-SCALE	+1	Efforts	Work pace	<ul style="list-style-type: none"> • working at very high speed • working tight deadlines 	
			Interruptions	<ul style="list-style-type: none"> • How often do you have to interrupt a task you are doing in order to take on an unforeseen task 	
			Ergonomic Risks	<ul style="list-style-type: none"> • Tiring or painful positions • Carrying or moving heavy loads • Standing 	
			Emotional strain	<ul style="list-style-type: none"> • Your job involves tasks that are in conflict with your personal values • You get emotionally involved in your work • You experience stress in your work 	
	-1	Rewards	Empowerment	<ul style="list-style-type: none"> • You are consulted before targets for your work are set • You are involved in improving the work organisation or work processes of your department or organisation • You have a say in the choice of your working partners • You can influence decisions that are important for your work 	
			Career advancement	<ul style="list-style-type: none"> • My job offers good prospects for career advancement 	
			Social support of colleagues	<ul style="list-style-type: none"> • Your colleagues help and support you • I have very good friends at work 	
			Satisfaction with wage	<ul style="list-style-type: none"> • I am well paid for the work I do 	

Control variables: according to the European Commission 2020 action plan, we see that women are underrepresented as entrepreneurs and seniors are underappreciated as start-up founders (European Commission, 2012). Literature on job-satisfaction and mental well-being suggests that mental well-being follows a U-shape in relation to age. This means that the younger and older groups have higher satisfaction than middle age groups (Clark et al. 1996).

Youngsters are enthusiastic and older people are more experienced and far more integrated in the work force. The middle aged groups would have more stress taking care of the family, had been faced with disappointments and are still far from retirement.

Therefore, we used sex and age as control variables. Sex was dichotomized: with 0 being a male respondent and 1 a female respondent. This makes the males the reference group in our statistics.

Our age variable was divided into three categories. 15 to 25-year-old is the youngest category, the 26 to 55-year-old as our middle category and the 56 to 70-year-old as our last category. In our statistics, we will treat our youngest category as the reference category.

Results

In this chapter we will focus on our regression models. The structure follows the logic of our literature study. At first, we look to the effects of each of the effort and reward variables on mental well-being for self-employed and employees in two separated models.

Secondly, we measure the effect of an imbalance between efforts and rewards on mental well-being. Here we use self-employed as a variable to how being self-employed influence the mental well-being.

Table 8.3. Means, Standard Deviations and inter-correlations.

Variables	<i>M</i>	<i>DP</i>	1	2	3	4	5	6	7	8	9	10	11	12
1. Well-being	4.31	1.00												
2. Self-employment status	-	-	-0,01											
3. Work pace	0.43	0.30	-0.08**	0.04**										
4. Interruptions	0.4	0.31	-0.07**	0.04**	0.18**									
5. Ergonomic risks	0.35	0.26	-0.09**	-0.06**	0.24**	-0.0								
6. Emotional strain	0.29	0.16	-0.08**	-0.09**	0.20**	0.19**	0.05**							
7. Empowerment	0.47	0.28	0.17**	-0.27**	-0,01	0.20**	-0.15**	0.25**						
8. Career advancement	0.43	0.43	0.21**	-0.04**	0.0	0.07**	-0.18**	0.06**	0.29**					
9. Colleagues social support	0.73	0.20	0.25**	0.03**	-0.07**	0.05**	-0.02**	-0.02**	0.28**	0.16**				
10. Satisfaction with wage	0.62	0.22	0.25**	-0.02*	-0.07**	-0.05**	-0.21**	-0.07**	0.19**	0.35**	0.17**			
11. Gender ^a	-	-	-0.04**	-0.11**	-0.04**	-0,01	-0.06**	0.05**	0.09**	-0.12**	-0.03**	0.01*		
12. Age ^b	1,54	0,50	-0.06**	0.09**	-0.10**	0.04**	-0.11**	0.07**	-0.07**	-0.07**	0,01	-0.07**	-0.02**	

Note. N= 32776 ** p<.01; * p <.05

^aa scale from 1 to 6, where 6 is the most positive mental well-being

^b1 = self-employed, 2 = employee

^cVariables 4 to 10 are all constructed the same way. As a scale ranging from 0-1 where 0 = no, 1 = yes.

^d0 = male, 1 = female

^e0 = <25, 1 = 26-55, 2 = >56

** p<.01; * p <.05

Almost all our correlations are significant. We see that the mean for well-being is 4.31. This corresponds with the WHO-5 mental well-being scale as having more than half of the time a positive mental well-being. For our rewards and effort variables we can roughly state that 0.50 our breaking point. We see that most of the means for efforts stay below 0.50 and the means for rewards are below 0.50 for empowerment and career advancement, above 0.50 for social support and wage satisfaction. We can note as well that the efforts correlate negatively with mental well-being and, our rewards correlate positively.

Effects of efforts and rewards on mental well-being

The effect of effort and reward variables on mental well-being for Self-employed.

A linear regression was calculated to predict mental well-being amongst self-employed based on the efforts and rewards (table: 9.1.). The regression model explained 7% of the variance of the well-being of the participants (($F = 12.09$, $p < .001$, $R^2_{adj} = .07$).

Table 9.1.: Results of regression Analysis Predicting Well-being by efforts and rewards for self-employed.

Efforts	Work pace	0,02
	Interruptions	0,09**
	Ergonomic Risks	-0,01
	Emotional strain	0,02
Rewards	Empowerment	0,11**
	Career advancement	0,02
	Social support of colleagues	0,10**
	Satisfaction with wage	0,13**

Note. N = 4982. Missings excluded. Standardized beta's.

** $p < .01$; * $p < .05$

Our results show that in what regards to efforts, only interruptions were significantly associated with well-being. However, this relationship is in the opposite direction of the expected: Interruptions are positively associated with self-employees' reported well-being ($\beta = .09$, $p < .01$).

In what regards rewards, our results show that they are all significantly and positively related with self-employees' mental wellbeing except for career advancement ($\beta = .02$, $p > .05$). Wage satisfaction was the reward with the highest association with self-employees' mental wellbeing.

The effect of effort and reward variables on mental well-being for Employees.

A linear regression was calculated to predict mental well-being amongst employees based on the efforts and rewards (Table 9.2.).-The regression model explained 14% of the variance of the well-being of the participants ((F =464,17, $p <.001$, $R^2_{adj} = .14$).

Table 9.2.: Results of regression Analysis Predicting Well-being by efforts and rewards for employees.

Efforts	Work pace	-0,03**
	Interruptions	-0,01**
	Ergonomic Risks	-0,02*
	Emotional strain	-0,08**
Rewards	Empowerment	0,08**
	Career advancement	0,11**
	Social support of colleagues	0,20**
	Satisfaction with wage	0,14**

Note. N = 27527. Missings excluded. Standardized beta's.

** $p <.01$; * $p <.05$

Our results show that all the hypothesized efforts (work pace, interruptions, ergonomic risks and emotional strain) were negatively associated with employees' mental well-being, with workplace ($\beta = -.01$, $p <.01$) and emotional strain ($\beta = -.08$, $p <.01$) being the most detrimental to employees' mental well-being. Moreover, the analyzed rewards (empowerment, career advancement, social support from colleagues and satisfaction with wage) were positively associated with employees' mental well-being, with social support from colleagues ($\beta = .99$, $p <.01$) and satisfaction with wage ($\beta = .64$, $p <.01$) being the most beneficial to employees' mental well-being.

Effects of an efforts – reward imbalance on mental-well-being

A hierarchical linear regression was calculated to predict mental well-being based on the efforts -rewards imbalance (Table 9.3). Here we used self-employment as a moderator variable. We tested four different models to show the increasing value of each variable added.

Table 9.3. : Results of Hierarchical Regression Analysis Predicting Well-being^a.

	Step 1	Step 2	Step 3	Step 4
Control variables				
Age ^b	-0.06**	-0.06**	-0.07**	-0.07**
Gender ^c	-0.06**	-0.06**	-0.07**	-0.06**
R ²	0.01**			
Main effects				
Self-employment status ^d		0.01	-0.02	0.05**
ERI ^e			-0.29**	-0.31**
ΔR ²		0.00**	0.08**	
Interaction effect				
ERI x Self-employment status				0.10**
ΔR ²				0.01**
Total Adjusted R ²	0.01**	0.01**	0.10**	0.10**
F- value	52.74**	35.30**	329.10**	275.99**

Note. N= 32776. Missings excluded. ** p<.01; * p <.05

^aa scale from 1 to 6, where 6 is the most positive mental well-being

^b0 = <25, 1 = 26-55, 2 = >56

^c0 = male, 1 = female

^d0 = employee, 1 = self-employed

^eRanging from -1 to 1, if ERI <0 there is an imbalance towards rewards, if ERI >0 there is an imbalance towards efforts.

** p<.01; * p <.05

Table 9.4. : Results of Regression Analysis Predicting Well-being^a . Results for self-employed & employees

	Self-employed	Employees
Control variables		
Age ^b	-0.01	-0.07**
Gender ^c	-0.06*	-0.07**
R^2		
Main effects		
ERI ^e	-0.10**	-0.31**
ΔR^2		
Total Adjusted R^2	0.01**	0.11**
F - value	5.49**	458.26**

Note. N= 32776. Self-employed: X, Employees: X Missings excluded.

** $p < .01$; * $p < .05$

^aa scale from 1 to 6, where 6 is the most positive mental well-being

^b0 = <25, 1 = 26-55, 2 = >56

^c0 = male, 1 = female

^d0 = employee, 1 = self-employed

^eRanging from -1 to 1, if ERI <0 there is an imbalance towards rewards, if ERI >0 there is an imbalance towards efforts.

** $p < .01$; * $p < .05$

Results show that age is negatively related with participants' self-reported mental well-being (age: $\beta = -.07$, $p < .01$).and also that women report to have lower levels of mental well-being than men (sex: $\beta = -.06$, $p < .01$). Moreover, self-employment status seems to be positively related with participants mental well-being ($\beta = .05$, $p < .01$), with self-employees reporting higher levels of mental well-being when compared to employees. The effort-rewards imbalance – meaning more efforts than rewards - is negatively associated with participants' self-reported mental well-being ($\beta = -.31$, $p < .01$). However, our results evidence

that self-employment status interacts significantly with effort-rewards imbalance in the prediction of participants' self-reported mental well-being ($\beta = .10, p < .01$). This regression model (Model 4) explained 10% of the variance of the well-being of the participants ($F = 275.99, p < .001, R^2_{\text{adj}} = .10$).

In order to understand the meaning of this interaction and to be able to interpret it, we ran the regression model (model 3) separately for employees and self-employees (Table 9.4). Results show that while for employees the effort-rewards imbalance was decreasing ($\beta = -0.31, p < .01$), and for self-employees also decreasing, but less ($\beta = -0.10, p < .01$). We see here that the effect of the imbalance both decreases mental wellbeing, but for self-employed less than for employees. The model for self-employed explained 1% of the variance of mental well-being ($F = 5.49, p < .001, R^2_{\text{adj}} = .01$) and the model for employees explained 1% of the variance ($F = 458.26, p < .001, R^2_{\text{adj}} = .11$).

Discussion

This dissertation aimed to answer three main questions: Is there a difference in the level of mental well-being in employees and self-employees? Are their differences in the predictors' of mental well-being depending on the self-employment status of the worker? And, are their differences in the effects of an efforts – reward imbalance on the mental well-being of self-employed and employees?-In order to answer our research questions, we used the Efforts-Rewards Imbalance model (ERI model) as a theoretical framework.

Our findings support our first hypothesis that self-employment status is positively associated with the self-reported mental well-being of the individual. In fact, self-employed people report better mental well-being when compared to employees. This is in line with the previous findings reported by other authors (e.g., Blanchflower & Oswald, 1998; Binder & Coad, 2013; Crum & Chen, 2015). In general, they state that self-employed are more resilient to stress and work related pressure. This is due to the higher autonomy.

Regarding our second hypothesis, that self-employment status would interact with both efforts and rewards in predicting self-reported mental well-being, our results support it. Indeed, our findings suggest that the predictors of self-employees' mental well-being are different from the predictors of employees' mental well-being.

Rewards, such as empowerment, career advancement, social support from colleagues and satisfaction with wage, are positively related with employees' mental well-being. The relevant rewards that are associated with mental well-being for self-employees are empowerment, wage and social support. Self-employed are in a higher risk work situation. They are responsible for the success of their business and their income. When these rewards are positive, we can assume that the business is successful.

So where is the difference between the self-employed and employees? We theorize this as the motivation synthesis. Here we see that the self-motivation and motivation of others influence the respondents. We suggest that employees are in a 360 degrees' environment, the self-employed in a 180-degrees' environment. As an employee, you are somewhere in the hierarchy of your working place. Employees are surrounded by colleagues, a boss and maybe subordinates. Our measurement of rewards consists of a scale that measures empowerment, career advancement, social support and wage satisfaction. Three out of those four variables

are influenced by your environment. Employees grow and develop themselves whilst being motivated by a 360-degree environment.

Self-employed are not always surrounded by colleagues or subordinates and certainly not with another boss that can motivate them on the work floor, they have a 180-degree environment. They have to rely more on self-motivation.

Career advancement is not influencing the mental well-being of a self-employed. For employees', career advancement (and wage increase) is a recognition of value by their boss and others, a self-employed cannot climb more up on the hierarchical ladder.

We see that for the rewards, motivation is key to increase the mental well-being. Though, self-employed will have to rely on self-motivation and employees have to rely on motivation by others.

Furthermore, while efforts like work pace, interruptions, ergonomic risks and emotional strain are negatively related with employees' mental well-being, none of them appear to be detrimental for self-employees' mental well-being. It seems that self-employed are not as affected by what we measured as efforts as the employees are. In fact, interruptions are the only efforts associated with self-employees' mental well-being and this effect is positive for the mental well-being. A high workplace and interruptions can actually be seen as an indication of a well-to-do business. Also, self-employed are more flexible to handle the other efforts, physical and emotion strain due to their autonomy.

Our data also supported our third hypothesis. In that hypothesis, we anticipated that self-employment status would interact with effort-rewards imbalance in predicting individuals' self-reported mental well-being. Actually, the present findings indicate that self-employment status moderated the relationship between the perceived the existence of more efforts than rewards at work (effort-rewards imbalance) and participants' self-reported mental well-being

These findings can add to support previous research. We see that all the efforts are negative for employees, but not for self-employed. The only effort that is significant for self-employed is interruptions. The other three variables, (1) a high workplace, (2) emotional and (3) ergonomical strain are not affecting self-employed significantly. We see here the advantages of self-employed autonomy. They can choose their workplace, will not do a job

that conflict with their values and can stop work more easily when the ergonomic strains increase.

When we look at the effect of an effort-reward imbalance, we see that self-employed are less influenced by an imbalance. They decrease less in mental well-being when efforts are higher than rewards. This was clear when we looked to our interaction effect. Here we can see that the self-employed are more resilient to the effects of an imbalance.

Finally, we also replicated the effect of sex on well-being already reported by other authors: Women report lower levels of mental well-being when compared to men.

We might also expect the opposite, because of all the work-family opportunities given for employees and the flexibility for self-employed women. But it is clear that these policies are not reflected in our results.

Limitations and future research

In this dissertation we also face some caveats. We do not keep into account the EU as a patchwork of different laws and cultures. They all support the workforce with different healthcare laws and care-taking habits and on the individual level we did not measure the differences between jobs. We do not assume that every job type has the same influence on mental well-being. White collar and blue collar workers' jobs will have different mental health related problems. This should be addressed in future research.

Moreover, the use of this wide-spread model, ERI model, has two major drawbacks. Firstly, this model is wide-spread in research because of its simplicity but this simplicity can also be the ERI's first weakness. The focus of the ERI model is to analyse the quality of work. We use a set of limited variables that reflect the psychological -and physical strain, but cannot include all strains. Therefore, due to the simplicity of the model the reality might not be fully reflected (Bakker & Demerouti, 2007).

Secondly, the scales of the ERI model are made out a set of predictor variables that indicate efforts and rewards. However, we cannot determine for each effort or reward variable the exact contribution to the imbalance. In the ERI model we use in the analysis, the Reward scale we use is composed of:(a) empowerment, (b) career advancement, (c) social support of colleagues, and (d) wage satisfaction. A drawback of using this is that it is unclear to determine specifically which of the above mentioned variables interacted more with mental well-being -unless we could measure the effects of the variables separately (Van Vegchel et al., 2005b). The second shortcoming we try to overcome by making a separate representation of the effects of the individual ERI variables on mental well-being.

In our study we group all of the European countries together (in total there are 30 different nationalities in this study). Each of those nations have their own legal system and procedures. They all have different economic status and bonds with labour unions. If there would be a comparison country per country, we would have different outcomes (Muckenhuber et al. 2014; Checchi & Lucifora, 2002; Benavides et al., 2000). What we also read as interregional differences are the diverse effects of the nationality on gender and age groups.

In future research there is need for a focus on gender. For example, the wage gap. Although we see differences between European countries, we can state that the wage gap does exist. In short, the gender wage gap states that women doing a similar job would earn less

than men (Schäfer & Gottschall, 2015; Blau & Kahn, 2016). As an effect, we should expect in our analysis a result showing that women have lower mental well-being than men, if wage be the only variable in our effort scale. In the ERI model we combine our separate effort and reward variables into the presented scales.

Wage cannot be the only effect on mental well-being. The complicity of gender roles needs to be kept in account. Parasuraman et al. focus on 'time preforming your job' (1996). They state that women have a high responsibility in the family and need to balance work-life more than men. This leads to decreased career opportunities, and more stress. As a self-employed woman you have the end-decision in choosing working hours and as an employee, you can rely on family responsive policies offered by employers (although certainly not in all jobs). Scandura & Lankau show that flexible work hours actually improve organizational commitment and job satisfaction, thus should be improving well-being (1997). We did not notice this improvement. In the future studies we might see the effect of these policies reflect in the result.

Conclusion

With this article we hope to break open a deeper discussion about the difference between self-employed and employees' subjective well-being. We contribute to this literature by looking in a generalist way to the effect of these choices on mental well-being. We used the ERI-model as a guide to help us understand the effects of the quality of work on the well-being of both self-employed people and employees.

When we measure the relationship between efforts and rewards separately. We see that for self-employed none of the efforts are seen as a factor that decreases mental well-being. Looking at these results, we can thus support previous literature on self-employees. A higher autonomy affects the mental well-being. Also the efforts can be understood as an indicator for entrepreneurial success.

The effect of the rewards is more equal. Tough for self-employed the rewards are: (1) empowerment, (2) social support of colleagues and (2) wage-satisfaction. For employees, all our rewards variables are positive for their mental-wellbeing. We see here the effect of motivation. In our literature we separated motivation in two ways, (1) motivation by others and, (2) self-motivation. Because of the 360 environment of an employee, the motivation for employees are due to others and because of the 180 environment of self-employed the motivation comes more out of the self.

An imbalance towards more efforts than rewards affects the mental wellbeing negatively for employees, this is not the case for self-employed. Self-employed are aware of the higher risks associated with self-employment and are more resilient to face these risks.

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