Exploring new grounds: cross-national research on work engagement and the moderating effect of the national perception of work centrality

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Master Thesis

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21-06-2019

Abstract

The prevalence of work-related stress and its consequences, such as burnout, are rising and are seen as one of the greatest challenges facing Europe regarding safe and healthy work. Policies aimed at work engagement reduce the prevalence of work-related stress and enhances the performance at work of employees. Although recent research claims that work engagement is related to specific country-level influences (such as work centrality), theoretical arguments remain unclear. This study focusses on explaining how the national perception of work centrality in European member states moderates the relationship between job resources and work engagement. By building on job demands-resources model and the conservation of resources theory, it is expected that the negative effect of a lack of job resources on work engagement is stronger for employees' who live in a European member state with a weak perception on work centrality because they are less motivated to develop new or retain job resources. In order to provide an answer to the research question, multi-level model analysis is conducted based on the national representative Sixth European Working Conditions Survey 2017, which is conducted in 28 European member states. The results of this study show the opposite of what is expected from the theory. The negative effect of job resources on work engagement is stronger for employees' who live in a European member state which has a strong perception of work centrality, instead of employees' who live in a European member state with a weak perception of work centrality. At last, the study shows that country-level variables only explain a very small part of the variance of work engagement and, therefore, support the claim that job resources are the most important predictors of work engagement and that the relationship is very robust against country-specific influences.

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1: Introduction

The pace and nature of work are changing, causing to put the mental well-being of workers at risk (European Union, 2008). In the past decade, the growing number of individuals who experience work-related stress is seen as one of the greatest challenges facing Europe regarding safety and health at work (Eurofound, 2010; European Agency for Safety and Health at Work, 2009). Eurobarometer (2014) reported that work-related stress is considered as one of the main health and safety risks among European member states; 53% of their respondents reported that they regularly or often experienced work-related stress. Research shows that work-related stress is associated with the prevalence of absenteeism due to burnout symptoms (Leiter & Maslach, 2003). Policymakers of the European Union acknowledge that the mental well-being of the workers is crucial for the productivity and innovation of the EU and that action is needed in order minimize the risk of work-related stress (European Agency for Safety and Health at Work, 2009; European Union, 2008). Work-related stress is high on the political agenda of the European Union and there is a need to expand the knowledge on the causes, consequences, and prevention of work-related stress (Eurofound, 2010; European Union, 2008).

Research on burnout has gained a lot of attention due to the increasing problems and consequences arising from work-related stress. Eurofound (2018) made an overview of studies on burnout in order to advice the European Union on developing policies on the prevention of burnout in the European member states. Eurofound (2018) argues that only a limited number of European member states have reported national representative data on the prevalence of burnout symptoms or work-related stress (Austria, Belgium, the Czech Republic, Germany, Estonia, Finland, Italy, the Netherlands, and Portugal). Although these are all national representative studies, they cannot be compared with each other. The studies

used different measurement scales to measure burnout symptoms, which causes the studies to show different results on the prevalence of burnout symptoms (Eurofound, 2018). Based on the information of the national representative studies, policymakers of the European Union are not able to develop universal policies on preventing burnout for all European member states, because they are not sure whether they could generalize the results of the national studies towards other European member states.

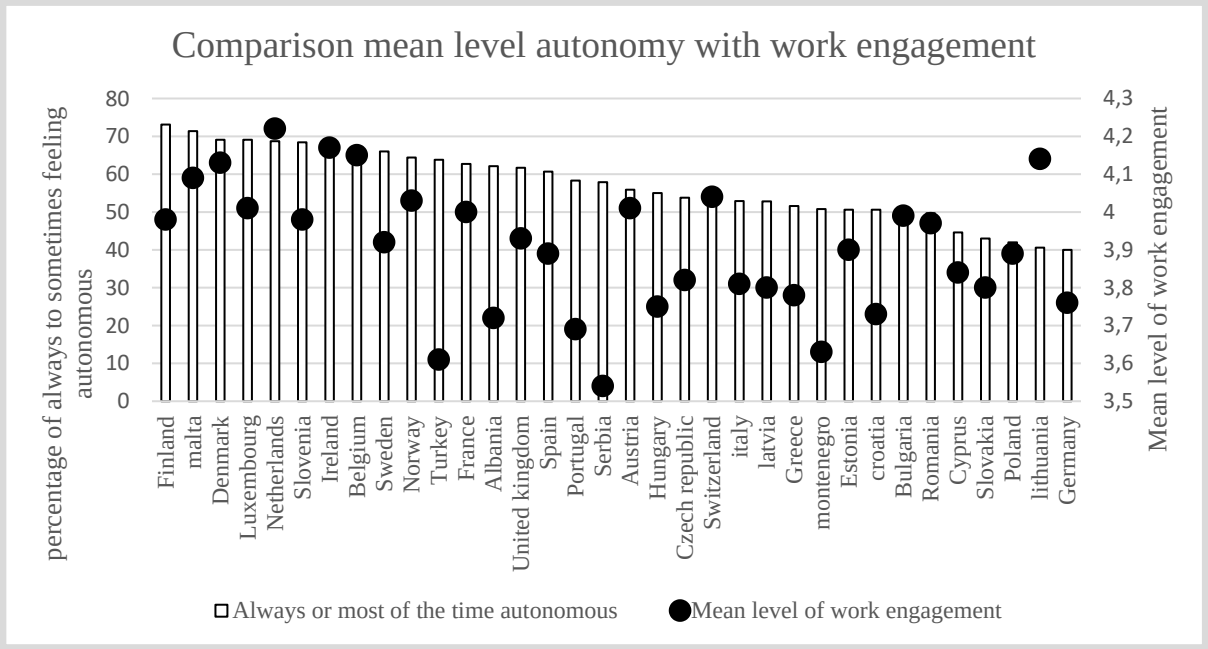
The focus on work engagement, the opposite of burnout, leads to new insights on the work-related stress problem. It can fill in the knowledge gap with cross-national and comparable data and can improve policies aimed at preventing burnout symptoms or work-related stress. Work engagement is defined as a positive, fulfilling, work-related state of mind that is characterized by vigour, dedication, and absorption (Schaufeli & Bakker, 2004). Research on work engagement provides constructive knowledge which enhances employees to empower themselves and prevent themselves from work-related stress (Bakker & Schaufeli, 2008). Work engagement increases individuals their intentions to remain in the organization, the experience of positive emotions, their health, their performance at work, enhance their self-growth, and reduce the risk of burnout (Bakker, Demerouti, & Sanz-Vergel, 2014). Work engagement not only reduces the risk and prevalence of work-related stress and burn-out, but it also enhances the process known as ‘job crafting’ (Eurofound & EU-OSHA, 2014). In this process, the employee tends to redesign his workplace and create their own job resources which allow them to cope/deal with their job demands more easily and reduce the risk of experiencing work-related stress (Bakker et al., 2014). The European Foundation for the Improvement of Living and Working Conditions (2017) developed the European Working Condition Survey (EWCS 2017), a survey which provides a universal and validated measurement of work engagement across 28 European member states. The EWCS 2017

provides data which makes it possible to measure work engagement in a universal way among 28 different European member states. This creates the possibility to examine cross-national differences or similarities regarding work engagement, expands the knowledge of cross-national research on work-related stress and enhances the European policies aimed at improving working conditions and reducing work-related stress and burnout symptoms (Eurofound & EU-OSHA, 2014).

Cross-national research on work engagement is scarce, as it is predominantly perceived as a psychological concept and most research on work engagement is focused on the individual and psychological level. Schaufeli (2018) recently published a European cross-national study which utilizes the validated measurement scale of work engagement from the EWCS 2017 and showed that contextual variables (such as work centrality, a strong democracy, economic welfare, and individualism) are significantly related to work engagement (European Foundation for the Improvement of Living and Working Conditions, 2017). However, he did not provide any further explanations on how these variables might affect the perception of work engagement. Although the literature is scarce on the contextual influences, there are more arguments to believe that contextual factors could influence the perception of work engagement and that cross-national research is an improvement on the existing theory. At first, Mauno, Kinnunen, and Ruokolainen (2007) argue that job resources, such as autonomy, are one of the most important predictors of work engagement and that the relationship is very stable at the individual level. Following this reasoning, it should be expected that European member states who score high on work engagement consist of a high percentage of autonomous workers. However, different results tend to appear for some member states when comparing the percentage of autonomous employees, presented by Eurofound (2017), with the mean level of work engagement of those states (figure 1). Figure 1 shows that there seems

to be no coherent trend of the percentage of autonomous workers on the mean level of work engagement as would have been expected.

Figure 1:



Source: (Eurofound, 2017; Schaufeli, 2018)

The second reason to believe that some contextual factors might influence the relationship between job resources and work engagement is by following the research on work values. Research showed that work values are likely to influence the translation of job characteristics into work-related motivation and outcomes (Hackman & Oldham, 1976; Park & Gursoy, 2012). Work centrality can be seen as a shared national work value which is influenced by the social institutions (i.e. the governmental system, the national level of union strength, industrialization, social stratification, economic situation and educational accessibility) of those countries (Parboteeah & Cullen, 2003). Schaufeli (2018) showed that the national perception of work centrality is related to work engagement. However, theoretical explanations on the effect of work centrality as a contextual factor on work engagement are

scarce. Research on age-generational differences is less scarce and is able to explain the influence of work centrality on work engagement. Age generations seem to differ in their work values and younger generations are expected to have a weaker perception of work centrality compared to the older generations (Wey Smola & Sutton, 2002). Research on age generations showed that the relationship between job resources and work engagement is moderated by this perception on work centrality; those who have a weak perception on work centrality are more likely to be disengaged from work when they perceive a lack of job resources compared to those with a stronger perception on work centrality (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Bal & Kooij, 2011; Park & Gursoy, 2012; Wey Smola & Sutton, 2002).

Until date, the effects of contextual factors on the relationship between job resources and work engagement remain largely unexplained. By following the reasoning of the two arguments it could be argued that the effect of job resources on work engagement could be different between European member states and that the national perception of work centrality in a member state is moderating this effect. However, the arguments need to be further examined in order to draw proper conclusions on them. The aim of this study is to examine if the effect of job resources on work engagement differs between European member states and if these possible differences could be explained by the moderating effect of the national perception of work centrality of those European member states. The information of this research will provide new scientific insights on the literature of work engagement and the knowledge will contribute to the European policies aimed at reducing work-related stress and burnout symptoms (Eurofound & EU-OSHA, 2014). This results in the following research question; "*is the relationship between job resources and work engagement for employees*

moderated by the European member states' national perception of work centrality? *And if so, how can this be explained?"*

In order to provide an answer to this research question, a theoretical overview will be provided of the available literature on the concepts of job resources, work engagement and work centrality, and how the concepts are related to each other. Three hypotheses are derived from the literature and based on these hypotheses, a multi-level model analysis is conducted based on the Sixth European Working Conditions Survey 2017 (EWCS, 2017) to test the hypotheses. The EWCS 2017 provides data on job resources and work engagement. The EWCS 2017 does not provide the data to measure the perception of work centrality, therefore aggregated data for work centrality will be derived from the European Value Study 4th wave 2008 (EVS 2008). The EVS 2008 is a large-scale cross-national survey which focusses on measuring the ideas, beliefs, preferences, attitudes, and values of citizens all over Europe. Because of the national representative data of the EWCS 2017 and the universal measurement of work engagement, it is possible to investigate the effect of job resources on work engagement and the moderating effect of work centrality on the relationship between job resources and work engagement between different countries.

2: Theory

In the following section, the state of the research is presented on the relationship between job resources and work engagement, and the moderating effect of work centrality on this relationship. First, the definitions of the important concepts are explained in order to provide a clear and unambiguous understanding. Afterwards, theoretical arguments are provided to explain the relationship between job resources and work engagement and how this relationship might be moderated by the perception of work centrality. The job demands-resources (JD-R) theory is used in order to explain the mechanisms between job resources and work engagement. This theory provides an explanation and understanding of how job resources are causing employees to be more or less engaged regarding their work. However, the JD-R theory is not able to provide a solid explanation of how the national perception of work centrality might moderate the relationship. Hence, different theoretical approaches are discussed to provide an explanation of the moderating effect of work centrality.

The concepts

Work engagement

It is mostly the research on burnout which stimulated most of the contemporary research on work engagement (Bakker & Schaufeli, 2008). Hence, a brief introduction to the concept of burnout and how the focus of research changed into the focus on work engagement is presented before elaborating on the concept of work engagement.

In 1974, Freudenberger (as cited in Bakker et al., 2014, p. 390) introduced the concept of burnout as “a state of mental and physical exhaustion caused by one’s professional life and the extinction of motivation when a worker fails to accomplish the desired result”. Maslach and Jackson (1981) elaborated on this concept and defined burnout as a syndrome which is

distinguished by a lack of personal accomplishment, emotional exhaustion and depersonalization. A lack of personal accomplishment refers to a decline in one's perception of successful achievements at work. Emotional exhaustion refers to the feeling when an individuals' emotional resources are depleted and feels he is no longer able to cope with his situation at a psychological level. Depersonalization, or cynicism, refers to one's perception of detachment and negative attitude towards his work (Maslach & Jackson, 1981).

After the introduction of burnout, much more research has been conducted on the concept of burnout which caused a prevailing negative approach in the research field on the well-being of workers (Bakker & Schaufeli, 2008). It could be argued that research on burnout is addressing mental illness and it only seeks to find an explanation for repairing the worst situation (Myers, 2000). As noted in the introduction, the pace and nature of work are changing (European Union, 2008). Managers began to realize that employees have a crucial role in competitiveness, innovation, organizational performance, and business success (Bakker & Schaufeli, 2008). Organizations changed their traditional management which was focussed on cost reduction, efficiency and cash flow, into more modern management which is focused on the investment of human capital (Bakker & Schaufeli, 2008). These modern organizations expect their employees to be motivated, show initiative, and take responsibility for their own development. In other words, modern organizations are looking for engaged employees who feel energetic, dedicated and are absorbed by their work. The positive psychological approach claimed that research failed to recognize the positive aspects of work and that it is necessary to focus more the positive sides of work in order to gain a full understanding on the meaning of work (Bakker, Schaufeli, Leiter, & Taris, 2008). The emergence of research on work engagement originated from this positive psychological approach and researchers began to focus more on human strength and optimal functioning instead of weakness and illness.

Kahn (1990, p. 694) introduced the concept of engagement and defined it as the "harnessing of organization members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances". Kahn (1990, p. 694) assumed that the work context, mediated by a worker's perception of the work context, creates the conditions in which they engage or disengage. A person is engaged when he drives personal energies in his work role and when the work allows the person to express himself (Kahn, 1990). Although Kahn (1990) presented a theoretical explanation of engagement in the work context, he did not propose an operationalization to measure his concept (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Maslach and Leiter (1997) followed the psychological approach and elaborated on Kahn's concept of engagement. They introduced their concept of work engagement as being the positive antipode of burnout and made it possible to operationalize work engagement with the Maslach Burnout Inventory (MBI). Maslach and Leiter (1997) originally developed the MBI in order to measure the three dimensions of burnout; emotional exhaustion, cynicism and inefficacy. In case of work engagement, they argued that exhaustion turns into energy, cynicism into involvement, and inefficacy into efficacy. In other words, low scores on exhaustion, cynicism and efficacy are indicative for work engagement. Schaufeli et al. (2002) re-examined this concept of work engagement and investigated whether work engagement really is the opposite of the three dimensions of burnout. They measured work engagement with different instruments and identified that two of the three dimensions of burnout are, indeed, the opposite of work engagement. The first dimension, *activation*, varies from emotional exhaustion to vigour, and the second dimension, *identification*, varies from cynicism to dedication. Following these dimensions, work engagement is characterized by vigour and dedication and burnout by emotional exhaustion and cynicism. Additionally, Schaufeli et al. (2002) found that burnout

and work engagement both show another independent dimension. Burnout includes a dimension of *efficacy* and work engagement includes a dimension of *absorption*. In contrast to the two dimensions of activation and identification, efficacy and absorption are not direct opposites. Schaufeli et al. (2002, p. 74) defined work engagement as "a positive, fulfilling, work-related state of mind that is characterized by vigour, dedication and absorption". *Vigour* is defined as “high levels of energy and mental resilience while working, the willingness to invest effort in one’s work, and persistence even in the face of difficulties” (Schaufeli et al., 2002, p. 74). *Dedication* is defined as “a sense of significance, enthusiasm, inspiration, pride and challenge” (Schaufeli et al., 2002, p. 74). *Absorption* is defined as “being fully concentrated and deeply engrossed in one’s work, whereby time passes quickly and one has difficulties with detaching oneself from work” (Schaufeli et al., 2002, p. 75).

At last, it could be argued that work engagement and workaholism are very similar to each other from a conceptual perception, but they should not be confused with each other. Workaholism is defined as “the compulsion to work excessively hard due to the presence of a strong, irresistible, inner drive” (Schaufeli, Taris, & Van Rhenen, 2008, p. 175). Workaholic employees tend to put an exceptional amount of energy and time into their work compared to what is expected from them by the people with whom they work. Both workaholism and work engagement are concepts which describe the employee's perception and behaviour towards their work and both share the behavioural aspect of working excessively hard because the employee is being “absorbed” into their work (Shimazu & Schaufeli, 2009). However, the underlying motivation for the absorption is different for engaged employees and workaholics: workaholics are driven by an obsessive inner drive which they cannot resist and engaged employees are intrinsically motivated (Shimazu & Schaufeli, 2009, p. 496). Workaholism can be seen as the negative counterpart of the absorption of employees into their work. Work engagement is related to the well-being of employees, whereas

workaholism is related with the unwell-being of employees (Shimazu & Schaufeli, 2009). Employees who spend an excessive amount of time and energy are likely to have insufficient opportunity to recover from their excessive efforts which could result in work-related stress (Shimazu & Schaufeli, 2009). Thus, the concept of work engagement is not focused on absorbing employees into their work due to the presence of an irresistible inner drive, but it is focused on absorbing employees by an internal motivation which causes the employees to like their job.

Job resources

The goal of this study is to explain the relationship between job resources and work engagement and the moderating effect of the national perception of work centrality. It is expected that job resources are the most important predictors of making individuals engaged in their work (Bakker et al., 2014). Job demands seem to be mostly related to burnout and have a relatively small effect on the perception of work engagement. Although job demands only play a small part in explaining the perception of work engagement, the definition of job demands will be since job resources and job demands are present in any kind of work-context.

Job demands are defined as “the physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological (i.e. cognitive or emotional) effort and are therefore associated with certain physiological and/or psychological costs” (Schaufeli & Bakker, 2004, pp. 295-296). Job resources are defined as “physical, psychological, social, or organizational aspects of the job that either/or (1) reduce job demands and the associated physiological and psychological costs; (2) are functional in achieving work goals; (3) stimulate personal growth, learning and development” (Schaufeli

& Bakker, 2004, p. 296). Job resources are located at four different levels: the organization (e.g. career opportunities and salary), the organization of work (e.g. participation in decision making), interpersonal and social relations (e.g. supervisor and co-worker support), and the task level (Bakker et al., 2007). Hackman and Oldham (1976, pp. 257-258) defined five different job resources at the task level as being the "core dimensions"; (1) skill variety, which refers to "the degree to which a job requires a variety of different activities in carrying out the work, which involves the use of a number of different skills and talents of the person"; (2) task identity, which refers to “the degree which the job requires completion of a whole and identifiable piece of work, or, doing a job from beginning to the end with a visible outcome”; (3) task significance, which refers to “the degree to which the job has a substantial impact on the lives or work of other people, whether in the immediate organization or in the external environment”; (4) autonomy, which refers to “the degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out”; (5) feedback, which refers to “the degree to which carrying out the work activities required by the job results in the individual obtaining direct and clear information about the effectiveness of his/her performance”. According to Hobfoll (2002), job resources are not only important in achieving goals, but are also important on their own by satisfying psychological needs (e.g. self-esteem or inner-peace), or act as a means to obtain centrally valued ends (e.g., money or social support). The process of how job resources are related to work engagement is explained further on.

Work centrality

Several studies indicate that work centrality is an important concept which moderates the relationship between job resources and work engagement (Bal & Kooij, 2011; Park &

Gursoy, 2012; Wey Smola & Sutton, 2002). The literature on the concept of work centrality contains many inconsistencies with regard to the definition and work centrality is often confused with comparable concepts (e.g. work involvement, work alienation, work commitment) (Paullay, Alliger, & Stone-Romero, 1994). Hence, it is important to provide a clear and unambiguous definition of work centrality. Where most of the different concepts tend to focus on the involvement with the present job, work centrality is defined as the degree of importance that work plays in one's life compared to other activities such as leisure time (Paullay et al., 1994). Work centrality can be seen as a shared cultural value of regions or countries which is influenced by organizations, economies, cultures and social institutions (Parboteeah & Cullen, 2003). Cultural value is defined as "the collective programming of the human mind that distinguishes the members of one human group from those of another" (Parboteeah, Cullen, & Paik, 2013, p. 2). The modernization theory argues that the development of countries from industrialization towards a post-industrialization produces a shift from materialistic and modern values towards post-materialistic and post-modern values (Inglehart & Baker, 2000). As individuals became more economic secure within these post-industrialized societies, the emphasis began to shift from materialistic security towards the quality of life, belonging, freedom, and self-expression of the individual (Hagström & Gamberale, 1995). As a consequence of these changing values, the attitudes towards work also began to change. The economic motivation of work became less important, the growing importance of leisure time became more important, individuals began to work fewer hours, began to study longer before entering the labour market, and began to retire earlier (Parboteeah et al., 2013; Quintanilla & Wilpert, 1991).

In Western European societies, the protestant ethic gave rise to a materialistic value system that tolerated economic accumulation and served as an important cultural change that encouraged the rise of capitalism and industrialization (Inglehart, 2000). The rise of

capitalism and industrialization within these Western European countries increased the economic prosperity and security of those countries, which in the end has shifted those countries towards post-industrialized and post-modern societies (Inglehart, 2000). Most Eastern European countries did not have such economic development as most of those countries did not have a protestant ethic and therefore hold less post-industrialized and post-modern values. Thus, it could be expected that work became less central in the lives of individuals who live in western European post-modern and economically well-developed countries and work will be more central in eastern European countries which are less economically developed and hold less post-modern values.

The motivational process

In the early progress on the research of burnout, the job demands-control model hypothesized that the presence of job demands and the absence of specific job resources predict burnout (Karasek, 1979). Demerouti, Bakker, de Jonge, and Janssen (2001) elaborated on the job demands-control model of Karasek (1979) and found that job demands and job resources follow two independent processes. The authors showed that job demands were mainly associated with exhaustion and health complaints, and job resources were mainly associated with engagement and organizational commitment. Maslach and Leiter (1997) argued that burnout and work engagement are opposites of each other. Schaufeli and Bakker (2004) re-examined the job demands-control model with the idea that burnout and work engagement are independent and distinct concepts and assumed two different processes; the energetic process and the motivational process.

The energetic process assumes that when individuals are confronted with high job demands they will adapt to these circumstances by using coping mechanisms which are associated with higher costs of energy. High job demands will deplete the individual his/her energy resources

when these working conditions are sustained for a longer period, which could result in the emergence of work-related stress and burnout symptoms (Schaufeli & Bakker, 2004).

The motivational process assumes that there is a relationship between job resources and work engagement. In this process, job resources serve as either an intrinsic motivation role such as personal growth, learning and development or as an extrinsic motivation role, because they are instrumental in achieving work goals (Schaufeli & Bakker, 2004). The intrinsic motivation role of job resources can be explained with the job characteristics theory which states that job resources would enhance the intrinsic motivation of individuals through a perception of three psychological states (i.e. meaningfulness, responsibility, and efficiency) (Hackman & Oldham, 1976; Schaufeli & Bakker, 2004). From this perspective, the five task-level resources (i.e. skill variety, task identity, task significance, autonomy and feedback) are important in determining an individual his/her response to the perception of work. Positive experiences on the psychological states will generate positive outcomes on work engagement, work performance, job satisfaction, and lowers the risk of absenteeism (Hackman & Oldham, 1976). In addition, job resources may also serve as extrinsic motivation. Work environments which offer enough resources to enhance the willingness of an individual to dedicate one's effort and ability to accomplish his/her work tasks (Meijman & Mulder, 1998). For example, a supportive supervisor or colleague will enhance the likelihood of achieving certain goals at work. In either case, fulfilling the satisfaction of the basic human needs or achieving work goals, the outcome is positive and work engagement is likely to be enhanced (Schaufeli & Bakker, 2004).

Following the theoretical assumptions of the motivational process, the following hypothesis can be derived: (H1) "*Job resources are positively related to the perception of work engagement among employees from all European member states*".

Country-level explanations

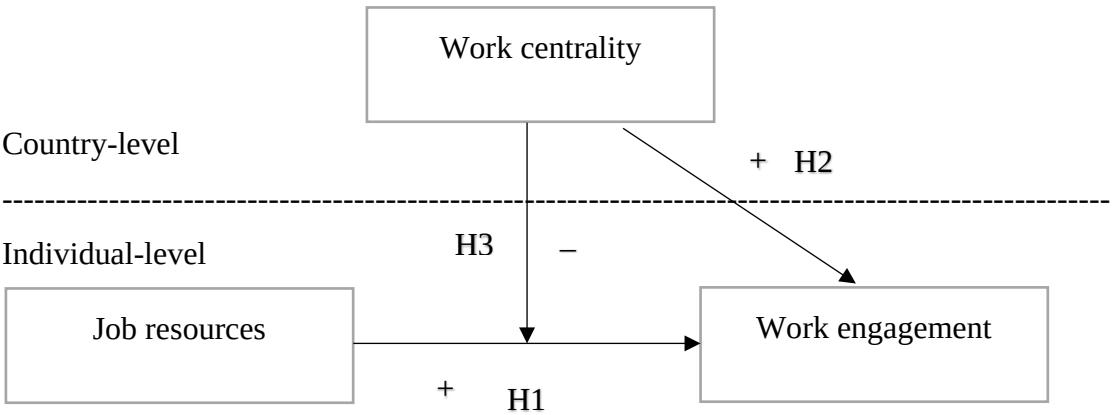
The motivational process provides a clear explanation of how work engagement is influenced at the individual level. However, explanations of the motivational process on the individual level are not able to provide solid explanations for possible cross-national differences in work engagement. Until date, European cross-national research on work engagement is scarce and has not yet provided an explanation of how country-specific influences could be related to job resources and work engagement. Schaufeli (2018) conducted a European cross-national study which utilizes a validated measurement scale of work engagement from the European Working condition Survey (European Foundation for the Improvement of Living and Working Conditions, 2017; Schaufeli, 2018). This study showed that work engagement does not only have a relationship with factors on the individual, psychological level, but also with economic and sociocultural influences. Schaufeli (2018) showed that the level of happiness, the economic situation, the governance, work centrality and the culture in a country have significant relations with work engagement, but he did not provide solid theoretical explanations on the cross-national differences. Although the scarcity of cross-national research on work engagement, there are studies which examined the influence of different work values on the relationship of job resources and work engagement between age generations (Bal & Kooij, 2011; Park & Gursoy, 2012; Sullivan, Forret, Carraher, & Mainiero, 2009). These studies are able to provide a theoretical explanation of the possible relationship between national work values, such as work centrality, and work engagement. Research showed that work values are likely to influence the translation of job characteristics into work-related motivation and outcomes and that the perception of work engagement is influenced by the perception of work centrality (Bal & Kooij, 2011; Hackman & Oldham, 1976; Park & Gursoy, 2012). According to the work-environment-fit model, individuals who work in an environment that “fits” their values or preferences are more likely to intrinsically

enjoy their work and become more engaged (Westerman & Yamamura, 2007). These values and preferences vary across individuals and are influenced by different sociocultural, economic, psychological, and physical factors (Schaufeli, 2018; Westerman & Yamamura, 2007). Following the work-environment-fit model, the perception of work centrality influences someone's perception of his work environment. Thus, employees who live in a European member state which has a stronger national perception of work centrality are more likely to value their work and therefore, are more likely to get engaged with their work (Uçanok, 2009). On the other side, employees who live in a European member state with a weaker national perception of work centrality are less likely to be engaged into their work, which explains a direct effect of the national perception of work centrality on work engagement (Westerman & Yamamura, 2007). Thus, following the work-environment-fit model it is be expected that: (H2) "*employees are more engaged in their work in European member states which have a strong national perception of work centrality*".

Park and Gursoy (2012) also examined the moderating effect of work values on the relation between job resources and work engagement. The perception of the lack of job resources tends to show a stronger negative effect on work engagement for younger generations who have a weaker perception of work centrality (Park & Gursoy, 2012; Sullivan et al., 2009). Drawing upon the conservation of resource theory, it is argued that individuals strive to protect, retain, and build resources that are valued to them (Hobfoll, 1989). Employees who place work more central in their life are more likely to make use of their knowledge, skills and other attributes for bettering their work (Uçanok, 2009). Employees who experience the perception of a lack of job resources will be less engaged towards their work and must invest their physical or psychological energy to develop new or retain job resources to prevent further loss of job resources (Bakker & Demerouti, 2008; Hobfoll, 2001; Hobfoll & Shirom,

2001). Employees who invest a significant amount of physical or psychological energy into their work have less energy to invest during their leisure time. When employees put work less central in their life, they are less inclined to invest energy in developing new or retaining job resources (Hobfoll, 1989; Park & Gursoy, 2012). Thus, employees who live in a country with a weak national perception of work centrality may become more disengaged regarding work when they perceive a lack of job resources as they perceive their work environment as less important and are less motivated to develop or build new job resources. On the other hand, when employees who live in a country with a strong perception of work centrality are confronted with a lack of job resources or too high job demands, they are more likely to invest physical or psychological energy into their work to develop or retain job resources as they perceive their work as more valued (Hobfoll & Shirom, 2001; Park & Gursoy, 2012). Thus, following the conservation of resources theory, it is expected that (H3) "*the negative effect of the lack of job resources on work engagement will be significantly stronger for employees living in European member states which have a weak national perception on work centrality compared to countries with a stronger national perception on work engagement*".

Conceptual model



3: Data and Methods

Data

In this study, the hypotheses are tested using quantitative data from the sixth European Working Conditions Survey 2017 (EWCS 2017). The EWCS 2017 is a longitudinal, cross-national, large-scale research program which aims to collect comparable and reliable data on working conditions across Europe (European Foundation for the Improvement of Living and Working Conditions, 2017). The sixth wave is used for this study because it provides the most recent data and is the first wave to include a universal measurement of work engagement. This longitudinal survey is conducted in 28 European member states. The respondents were selected through multi-stage, stratified, random samples of the working population in each country. Country-level samples were stratified by region and degree of urbanization. In each of these stratums, a random selection of households proportional to the size of the stratum was selected. Finally, the person of that household who had a paid job and had his birthday next was selected (European Foundation for the Improvement of Living and Working Conditions, 2017). The respondents had to be older than 15 years old and in employment during the time of the survey. This resulted in 43,850 respondents who participated in face-to-face interviews with a standardized questionnaire. Depending on the national arrangements and country size the sample size ranged from 1000 to 3300 respondents for each country. The data from this survey provides all necessary, except the data for the national perception of work centrality, information to test the hypotheses for this study. The national perception of work centrality will be derived from the European Value Studies wave 4th wave 2008 (EVS 2008). The EVS is a longitudinal, cross-national, large scale research program, conducted from 2008 until 2010, which provides information about human values for over 47 countries in Europe (EVS, 2016).

Methods

In order to test the hypotheses of this study, the statistical program SPSS is used to conduct the analyses. In order to test the first hypothesis, an ordinary least square (OLS) regression analysis and a multi-level analysis are conducted. An OLS regression allows us to see whether job resources indeed have a positive effect on work engagement for all respondents in the survey. The multi-level model becomes more important for the second and third hypothesis.

For the second hypothesis, the relationship between the mean of work centrality on the country-level with the individual score of work engagement is tested by following a multi-level model analysis. A multi-level model analysis assumes that the respondents are clustered within different contexts and allows to examine whether the respondents in a country show similarity and if the effect of job resources on work engagement is different between European member states. The intra-class-coefficient (ICC) is calculated in order to measure how much of the variance of work engagement is explained by differences between the European member states. If contextual variables have a strong effect on the employees who live within it then the variability of work engagement within the contexts will be small and the ICC shows a high score (Field, 2013). The ICC is presented in the results section.

For the third hypothesis, a cross-level interaction is conducted, in order to test the moderating effect of the national perception of work centrality on the relationship between job resources and work engagement on the individual level.

Each of the hypotheses is tested by different models and are built up by following a nested model strategy. In the nested model strategy, every model is tested on the explained variance of the dependent variable by using a chi-square likelihood ratio test. SPSS reports the -2log likelihood ratio for every model and the smaller the value of the -2log likelihood ratio, the more variance the model explains (Field, 2013). The nested model strategy starts by

conducting a null model in which only the dependent variable is included. The null model presents a certain value of the -2log likelihood and in every following model the value of the -2log likelihood will be compared with the previous model (i.e. model 1 is compared with the null model and model 2 is compared with model 1). The difference between the -2log likelihood has to be larger than a certain value in order to be a significant improvement on the previous model (See Appendix 1 for these values).

There are several important conditions in order to state that the multi-level model analysis is appropriate to use. The first important condition is that the assumptions (i.e. normally distributed data, homogeneity of variance, and multicollinearity) of statistical analysis are not violated. A model diagnostics check is conducted in order to test if these assumptions are violated, and when these assumptions are violated it also checks whether it affects the analysis. This model diagnostics check is presented in appendix 2. A second important condition for a multi-level model analysis is that enough countries and respondents are included. A minimum of 25 countries is necessary in order to have unbiased estimates of the slopes and intercepts and to have a good variance of the estimates, which reduces the chance of having problems with multicollinearity (Bryan & Jenkins, 2015). Following this reasoning, the EWCS 2017 is an appropriate dataset as it provides 28 European member states, with a large number of respondents within these member states.

At last, to improve the interpretation of the results the intercept will have a meaningful value. In a multi-level model analysis, the intercept indicates the value of the dependent variables when all independent variables take a value of 0. Some of the variables in this analysis do not have a meaningful score of 0 (e.g. job resources and work-family balance). The variables which do not have a meaningful score for 0 in the multi-level model analysis will be ‘grand mean centred'. This means that for a given variable each score is subtracted from the mean of

all scores of that variable, which makes the mean of that variable centred at 0. Afterwards, all variables will have a meaningful score of 0 and the value of the intercept becomes a meaningful interpretation. Additionally, multilevel models with grand mean centred variables tend to be more stable and is a useful way in order to combat the multicollinearity between the independent variables (Field, 2013, p. 741).

At the end of this section the descriptive table is presented (table 1). This table shows that a total of 31,127 respondents are included in the analysis. This number is smaller compared to the total amount of respondents from the EWCS 2017 (43,850) because any respondent who did not provide a valid answer to one or more questions is removed from the analysis. After checking the missing values, no unusual missing values are detected.

Operationalization

Dependent variable

Work engagement - The EWCS 2017 constructed a measurement scale for work engagement consisting out of six questions. The six questions were based on a 5-point-scale measurement varying from 1 (always) to 5 (never). The following questions are included; *(1) Q90a at my work I feel full of energy*; *(2) Q90b I am enthusiastic about my job*; *(3) Q90c Time flies when I am working*; *(4) Q90d I feel exhausted at the end of my working day*; *(5) Q90e I doubt the importance of my work*; *(6) Q90f in my opinion I am good at my job*. The first three questions are most likely to be related to the three dimensions of work engagement; vigour, dedication, and absorption. However, it is difficult to conclude how the last three questions are related to the construct of work engagement. Therefore, a rotated oblimin factor analysis is conducted in order to examine if all 6 questions form a reliable and valid construct for measuring work engagement. The factor analysis showed that only the first three questions (Q90a, Q90b, and Q90c) load high on the latent factor. The other three factors will not be added into the

analysis since they do not load high enough on the latent factor. At last, a Cronbach's alpha reliability analysis shows that the first three questions show a value of 0.736. This means that the three variables together are internally consistent and reliable to use together as a construct (Tilburg University, 2019). Thus, work engagement will be measured by using question Q60a, Q60b, and Q60c. The scores of these three questions are summed up and divided by three, which results in the mean score of the three questions together. Thus, the value varies from 1 to 5 in which a higher score represents a higher engagement in work.

Independent variables

Job resources – As defined by the job characteristics theory, there are five dimensions of job resources (i.e. skill variety, task identity, task significance, autonomy and feedback) which are expected to be related with work engagement (Hackman & Oldham, 1976). *Skill variety* will be measured by using question Q55 (*Does your job involve rotating tasks between yourself and your colleagues*). Respondents were able to answer either (1) yes or (2) no. *Task identity, task significance* and *autonomy* were measured by questions using a 5-point-scale varying from 1 (always) to 5 (never). *Task identity* will be measured using question Q61j (*You have the feeling of doing useful work*). *Task significance* will be measured using question Q61h (*Your job gives you the feeling of work well done*). *Autonomy* will be measured using question Q61i (*You are able to apply your own ideas in your work*). *Feedback* is measured by question Q89c (*I receive the recognition I deserve for my work*). This question was measured by using a 5-point-scale varying from 1 (strongly agree) to 5 (strongly disagree). By conducting a non-rotated principal component analysis, it seems that there are 2 latent factors and that task identity, task significance, autonomy, and feedback load high on factor 1 and that skill variety only loads high on factor 2. The survey does not provide an alternative question in order to measure skill variety, so therefore skill variety will

not be included in the analysis. An internal consistency test shows a Cronbach's alpha of .667 for the four variables. Values between 0.6 and 0.7 seem to have questionable internal consistency (Tilburg University, 2019). As .667 is rounded up to .7, for this study it will be assumed that the variables are internally consistent and reliable to use in the analysis. The scores of these four variables are summed up and divided by four, which results in the mean score of the four variables together. Thus, the value varies from 1 to 5 in which a higher score represents a perception of high job resources.

Work centrality – As mentioned in the data section, the data for work centrality will be derived from the EVS 2008. The following question will be used to measure work centrality; v96 *Work should always come first, even if it means less spare time*. The variable was measured by using a 5-point-scale varying from 1 (strongly agree) to 5 (strongly disagree). The average score of all individuals from a country will be used as the country level of work centrality. The mean scores for each country will be added to the dataset of the EWCS 2017.

Control variables

Gender – Research shows that gender is related to work engagement; females tend to be more engaged compared to men (Fong & Ng, 2012). However, other research shows that gender is not significantly related to work engagement (Schaufeli, Bakker, & Salanova, 2006). Gender will be included in the analyses in order to control for the possible relationship with work engagement. In order to create the gender variable question Q2a (*What is your gender?*) is used. This variable is recoded in such a way that a score of 0 represents a female respondent and a score of 1 represents a male respondent.

Generation Cohorts – Generation cohorts are included as control variables because research found a relationship between generational cohorts and work engagement, older generations are more engaged towards their work compared to younger generations (Hoole & Bonnema, 2015; Park & Gursoy, 2012). In order to create the generation cohorts, the question Q2b (*How old are you?*) will be used. Baby boomers will be defined as people born between 1945-1964 (age 70-51). Generation X will be defined as people born between 1965-1980 (age 50-35). Millennials will be defined as people born between 1981-2000 (age 34-15). All other values will be defined as missing values.

Employment contract – The kind of employment contract seems to be related to work engagement. It is expected that employees with a permanent contract score higher on work engagement as they have more job security and job resources as the organization invests more into employees who are staying for a 'permanent' period. Employees with a contract of limited duration are expected to have a lower score on work engagement, especially those with a temporary agency contract. Temporary contracts are distinguished into two categories; temporary agency contracts and limited duration contracts. People with a contract of limited duration often have a contract for a year or longer and often have the possibility to receive a permanent contract afterwards. This kind of contract provides more employment stability, feelings of job security, and is possibly related to more job resources as the organizations invest more in an employee who is staying for a longer period. Employees who work on a temporary agency contract typically occupy precarious positions that have insecure employment stability and organizations are less likely to invest in these employees (Kompier, Ybema, Janssen, & Taris, 2009). At last, there are also people who work for an organization but do not have a contract. An example of this situation would be a self-employed worker who is hired by an organization in order to work for them. The expectation for this category

is that organizations are least motivated to help them as they are no part of the organization. This variable will be measured by using question Q11 (*What kind of employment contract do you have in your main paid job?*) and is recoded into four different dummy variables; permanent contract; contract of limited duration; temporary agency contract; no contract. All other values will be recoded as missing values.

Public versus private sector - Research showed that there is a significant difference in work engagement between employees who work in the public or private sector. Employees who work in the private sector tend to show higher scores on work engagement because private organizations tend to offer more incentives to boost the performance of the employees in order to boost the profit (Agyemang & Ofei, 2013). This variable will be measured by using question Q14 (*Are you working in; private sector; public sector; joint private-public; not-for-profit sector; other (please specify)?*). The variable is recoded into three different dummies. The first variable is the private sector. The second is the public sector, which consists of the respondents who answered that they work in either the public sector of the not-for-profit sector. These two sectors are combined because in both sectors it is expected that the organization are not profit driven and are therefore less likely to provide the incentives to boost the performance. The last sector is the joint private-public, this sector is kept a variable on itself because it is unclear if the respondents either have the incentives to boost their performance or not. Respondents who answered that they work in the "other" sector are recoded as missing values.

Work-family balance – Research showed a significant positive relationship between work-family balance and work engagement. Those with a better balance between their work and their family tend to have a higher score on work engagement (Mauno et al., 2007). Because

of this significant relationship, work-family balance will be controlled for in the analysis. This variable is measured by using question Q44 (*In general, how do your working hours fit in with your family or social commitments outside work?*), which is measured by a 4-point scale varying from a score of 1 (very well) to 4 (not at all well). The variable is recoded in such a way that a higher score represents a better balance between work and family.

Job demands – Bakker et al. (2014) argue that job demands show a negative significant with work engagement. The most important job demands for predicting work engagement are work pressure, role clarity, work-related stress, and job security (Bakker et al., 2014; Joubert & Rothmann, 2007). First, work pressure will be measured using question Q61g (*Do you have enough time to get the job done?*). Secondly, role clarity will be measured by using question Q61k (*You know what is expected from you at work?*). Thirdly, work-related stress will be measured by using question Q61m (*Do you experience stress in your work?*). At last, job security will be measured by using question Q89g (*I might lose my job in the next six months?*). The first three variables (i.e. work pressure, role clarity, and work-related stress) are measured by using a 5-point scale varying from 1(always) to 5 (never). The last variable (i.e. job security) was measured with a 5-point scale varying from 1 (strongly agree) to 5 (strongly disagree). The variables are recoded in such a way that a higher score represents higher demands. In the case of role clarity, it means that a higher score means that the respondent does not know what is expected from him/her.

Job satisfaction – Research showed that job satisfaction is related to work engagement. Those with a higher score on job satisfaction also score higher on work engagement (Christian, Garza, & Slaughter, 2011; Park & Gursoy, 2012). Job satisfaction will be measured by using question Q88 (*On the whole, are you very satisfied, satisfied, not very*

satisfied or not at all satisfied with working conditions in your main paid job?) which is measured with a 4-point scale varying from 1 (very satisfied) to 4 (not at all satisfied). The variable is recoded in such a way that a higher score represents a higher satisfaction.

Table 1 - Descriptive statistics

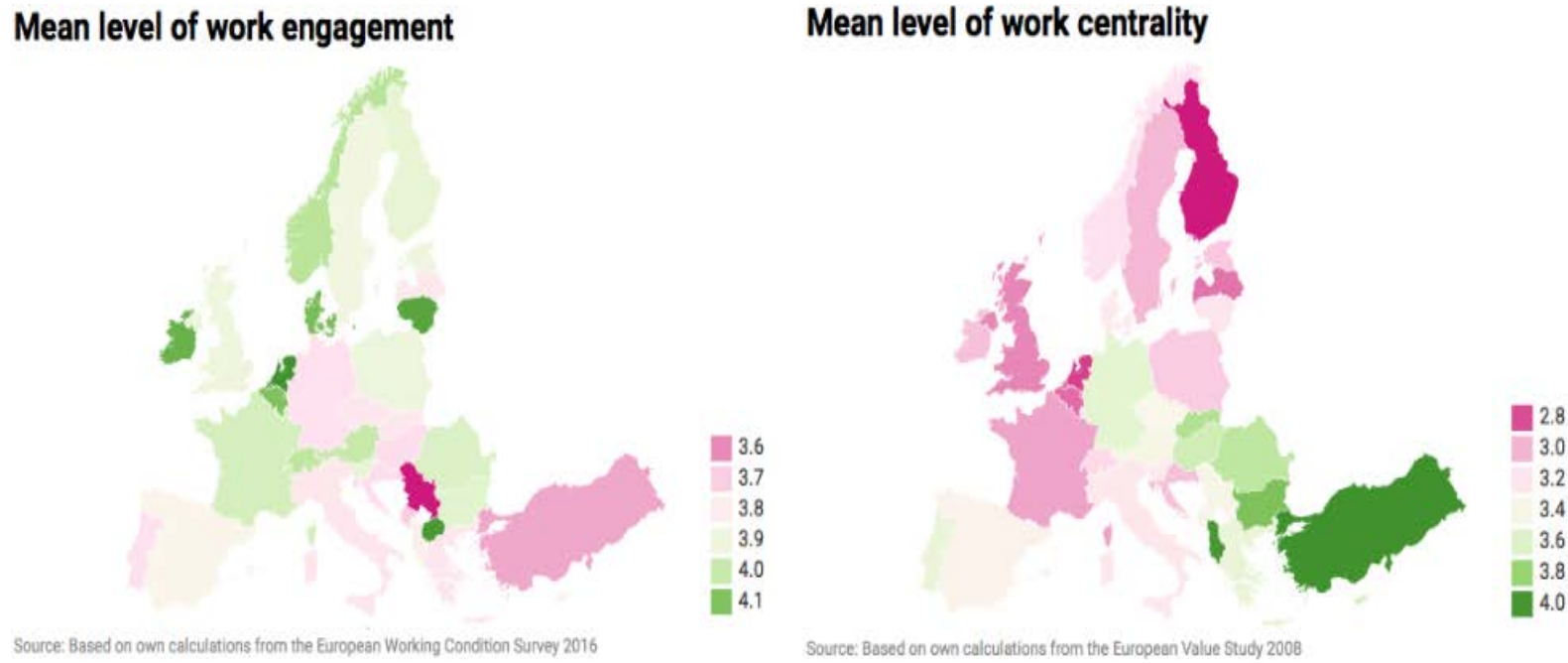
	N	Min/Max	Mean	%	Std. deviation
Work engagement	31127	1/5	3.904		.726
Job resources	31127	1/5	3.883		.759
Work centrality	31127	2.72/4.01	3.276		.329
Gender (ref. female)	31127	0/1	.485		.499
Generation cohorts					
Millennials (age 15-34)	9336	0/1	.30	30	.458
Generation X (age 35-50)	13249	0/1	.426	42.6	.494
Baby boomers (age 51-70)	8542	0/1	.274	27.4	.446
Employment contract					
Permanent contract	24251	0/1	.779	77.9	.415
Contract of limited duration	3597	0/1	.116	11.6	.319
Temporary agency contract	419	0/1	.013	1.3	.115
No contract	2433	0/1	.078	7.8	.268
Private versus public sector					
Private sector	20384	0/1	.655	65.5	.475
Public sector	9234	0/1	.297	29.7	.457
Joint private-public sector	1156	0/1	.037	3.7	.189
Work-family balance	31127	1/4	3.086		.745
Work pressure	31127	1/5	2.07		.999
Role clarity	31127	1/5	1.43		.733
Work stress	31127	1/5	3.10		1.147
Job security	31127	1/5	2.102		1.296
Job satisfaction	31127	1/4	3.066		.691

Source: European working condition survey (2017) & European value study (2008)

4: Results

Before providing answers to the hypotheses of this study, an exploratory analysis is presented in order to provide more insight into the data. The average values of work centrality and work engagement from the respondents are presented in a geographical heat map (figure 2). On the left map it visible that mainly the western countries score high on work engagement, with Germany and Lithuania as notable exceptions. On the right map, it is shown that most western countries score low on work centrality, as expected from the literature. From this first insight, it appears that Western European member states which score lower on the perception of work centrality tend to score higher on work engagement. Although these numbers are not statistically analysed, it might point out a possible correlation between the two variables which is in the opposite direction than what is expected in this study.

Figure 2:



At first, the effects of the individual level variables on work engagement are tested and the first hypothesis will be either supported or rejected; "*Job resources are positively related with the perception of work engagement among citizens from European countries*".

An OLS regression analysis is conducted in order to see what individual factors have an effect on work engagement. According to the OLS regression (table 2), job resources have a significant and positive effect on work engagement when controlling for all other variables (β = .412, p<.001). By just adding the control variables in the analysis (model 1 of table 2), 25.3% of the variance in work engagement is explained (R^2=.253, F(14,31112)=752.662, p<0,001). When adding job resources into the analysis, the results indicated that all variables explain 37.2% (R^2=.372, F(15,31111)=1228.194, p<.001) of the variance in work engagement. It has to be taken into regard that by computing an OLS regression possible differences between European member states are not considered.

As mentioned in the data and methods section, a multilevel model analysis makes it possible to calculate how much of the variance is explained by clustering the respondents in the European member states. An empty multilevel model on work engagement with allowing a random intercept for each country leads to the results presented in the "null model' of table 3. The intra-class coefficient (ICC or ρ) is calculated with the following formula;

$$\rho_1\ (ICC) = \frac{\sigma^2_{\mu 0}(intercept\ variance)}{\sigma^2_{\mu 0}(intercept\ variance) + \sigma^2_r(residual\ variance)} * 100 = \frac{0.026}{0.026 + 0.502} * 100 = 4.92\%$$

According to this equation, 4.92% of the variance of work engagement is explained by country clustering. The ICC represents a small score which means that country-level factors only have little effect on the employees' perception of work engagement. This indicates that a larger part of the variability in work engagement is explained by differences on the individual level. As the ICC shows a relatively small number, it could be expected that the effect of job

resources on work engagement won't be much different compared to the OLS regression. A random intercepts multilevel model with the individual level variables is conducted to check if the results are similar to those of the OLS regression (model 1 of table 3). The results of this analysis show almost identical results. Job resources have a significant and positive effect on work engagement (β = .408, p<.001). The explained variances of work engagement in model 2 can be computed with the following formula:

$$R^2\ Individual\ = \frac{(resi\ empty\ model - \ residual\ model\ 1)}{resi\ empty\ model} * 100 = \frac{0.502 - 0.318}{0.502} * 100 = 36.65\%$$

$$R^2\ Country\ = \frac{(intercept\ variance\ empty\ model - \ intercept\ variance\ model\ 1)}{intercept\ variance\ empty\ model} * 100 = \frac{0.026 - 0.014}{0.026} * 100$$

$$= 46.15\%$$

According to the equations, 36.65% of the variance on the individual level and 46.15% of the country level variation is explained by a random intercept model of job resources, controlling for all other control variables on work engagement. The explained variance on the individual level is almost identical to the explained variance of the OLS regression. To conclude, hypothesis 1 is supported; job resources indeed have a positive relationship with the perception of work engagement among employees from European countries, when controlling for all other variables.

Table 2 - OLS Regression on work engagement

	Model 1		Model 2	
	b	Std. error	b	Std. error
Job resources			.412**	.005
Gender (ref. female)	-.026**	.007	-.032**	
Generations (ref. Millennials)				
Generation X	.027**	0.009	.008	.008
Baby Boomers	.035**	.010	.011	.009
Contract (ref. Permanent contract)				
Contract of limited duration	.011	.012	.011	.011
Temporary agency contract	-.062*	.031	-.019	.029
No contract	-.080**	.012	-.081**	.012
Private versus public sector (ref. public sector)				
Public sector	.054**	.008	.025**	.005
Joint private-public sector	.046*	.019	.032	.017
Work family balance	.064**	.005	.039**	.005
Work pressure	-.056**	.004	-.003	.004
Role clarity	-.157**	.005	-.051**	.005
Work stress	.007*	.003	.018**	.003
Job security	-.038**	.003	-.014**	.003
Job satisfaction	.380**	.006	.215**	.006
Intercept	2.905**	.028	1.564**	.031
	R^2: .253**		R^2: .372**	

Note: *p<.05 **p<.01
Source: European Working Condition Survey (2017)

After looking at the effects of individual factors on work engagement the focus will be on country-specific factors to provide an answer on the second hypothesis; "*employees are more engaged regarding their work in European member states which have a strong national perception on work centrality*". The results of model 2 of table 3 are used to provide an answer to the second hypothesis. Model 2 of Table 3 presents the results of a random intercept multilevel model with the individual and contextual (i.e. work centrality) level variables. By following the nested model method, it seems that model 2 is not a significant improvement on model 1. The deviance in -2 log likelihood between model 1 and 2 is 2.07 with a difference of 1 degree of freedom (df). The difference for 1 df must be larger than 3.84 (p=0.05), thus there is no significant difference between model 1 and 2. To conclude, hypothesis 2 is rejected; There is no significant difference in work engagement for employees who live in European member states with a strong national perception of work centrality,

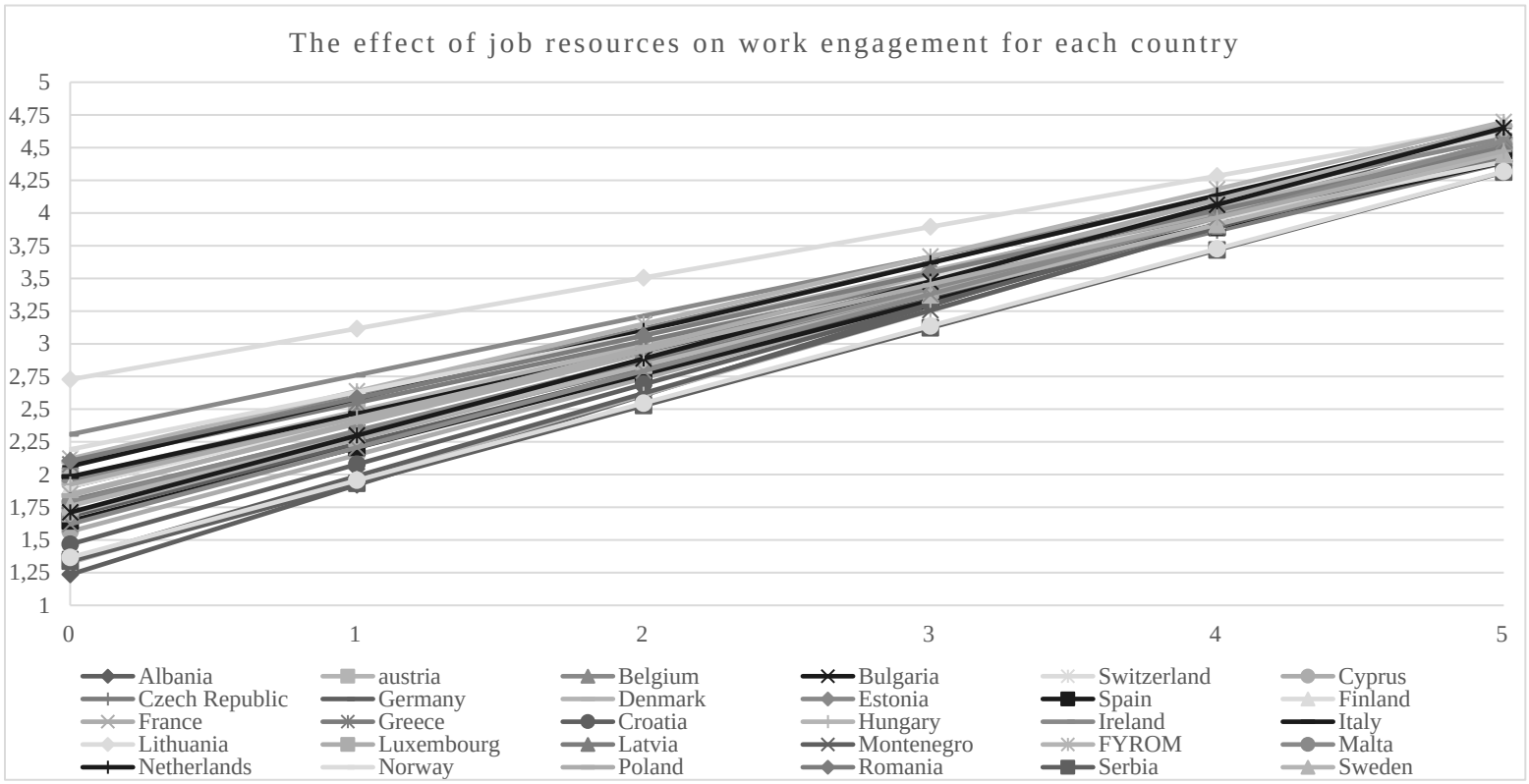
compared to European member states with a weak national perception of work centrality when controlling for all other variables.

As it seems that work centrality is not directly related to work engagement it could still be possible that the effect of work centrality is moderating the relationship between job resources and work engagement. With a random slope multilevel analysis, it is possible to find out if the effect of job resources on work engagement has different slopes for European member states. Model 3 of Table 3 shows the results of a multi-level analysis which allows job resources to have a different slope for each European member state. The difference between the deviance of model 2 and 3 is 84.292 (-2 log likelihood) with a difference of 2 degrees of freedom (df). The difference for 2 df must be larger than 13,26 ($p=0.01$) in order to be a significant improvement. The deviance of the -2 log likelihood between model 2 and 3 is significant for an alpha of 0.01, thus model three is a significant improvement on the previous model. Since the slope variance and the intercept variance are significant it can be concluded that the intercepts and slopes for the relationship between job resources and work engagement (controlling for all other variables) vary significantly across the different European member states. This is presented in figure 3. The significant negative result of the covariance (i.e. UN 1,2) (parameter = -.003, $p<.01$) shows that the intercept and slopes are related to each other. This means that if the value of the intercept for a country increases, the value of the slope decreases. The value of the parameter of the covariance is relatively small which indicates that although the differences are significant, the differences are very small (as seen in figure 3).

The effect of work centrality is not significant which means that work centrality is not related to work engagement. Thus, the variance in the slopes of job resources for the European member states on work engagement cannot be explained by a direct effect of work centrality,

as work centrality does not show a significant relationship with work engagement. Again, the second hypothesis is rejected; There is no significant difference in work engagement for employees who live in European member states with a strong national perception of work centrality, compared to European member states with a weak national perception of work centrality when controlling for all other variables.

Figure 3:



In model three it is shown that the value of the slopes and the intercepts are significantly different for the European member states, but no explanation has yet been found for these significant differences. According to the third hypothesis it is expected that the negative effect of the lack of job resources on work engagement will be significantly stronger in European member states which have a weaker perception on work centrality. To provide an answer to the third hypothesis a cross-level interaction will be conducted (model 4 of table 3). At first, the deviance between model 3 and 4 is 6.42 (-2 log likelihood) with a difference

of 1 degrees of freedom (df). The difference for 1 df must be larger than 3.84 (p=0.05). The difference of the -2 log likelihood between model 2 and 3 is significant for an alpha of 0.05, which means that the cross-level interaction is a significant improvement on model 3 and that work centrality moderates the effect of job resources on work engagement when controlling for all other variables. By adding the cross-level interaction term between job resources and work centrality the significance of the covariance has disappeared. The covariance indicates that as the value of the intercept increases the value of the slope decreases. The disappearance of the significance of the covariances indicates that there are no significant differences between European member states regarding the correlation between the intercept and the slope of job resources. It seems that the cross-level interaction between work centrality and job resources is able to explain the differences between the European member states regarding the correlation between the slope of job resources and the intercept of work engagement. The interaction term shows a significant and positive effect ($\beta = .073$, $p<.05$), which indicates that the value of the slope of job resources on work engagement increases as the value in work centrality increases. Figure 4 shows a graph of the moderating effect of work centrality on the relationship between job resources and work engagement when controlling for all other variables. It shows that the negative effect of the lack of job resources is stronger for employees who live in a country with a stronger perception of work centrality. It is also interesting to note that the higher an employee perceives his/her job resources the less important the effect of work centrality becomes. Although the effect of work centrality does moderate the effect of job resources on work engagement, hypothesis three is rejected; the negative effect of the lack of job resources on work engagement is not stronger in European member states which have a weaker perception of work centrality, but it is stronger for employees who live in a country with a stronger perception of work centrality. However, the conclusion has to be taken with caution as the differences in the effects are rather small

and the significance of the covariance did not change very much, but it changed just enough to become insignificant.

Figure 4:

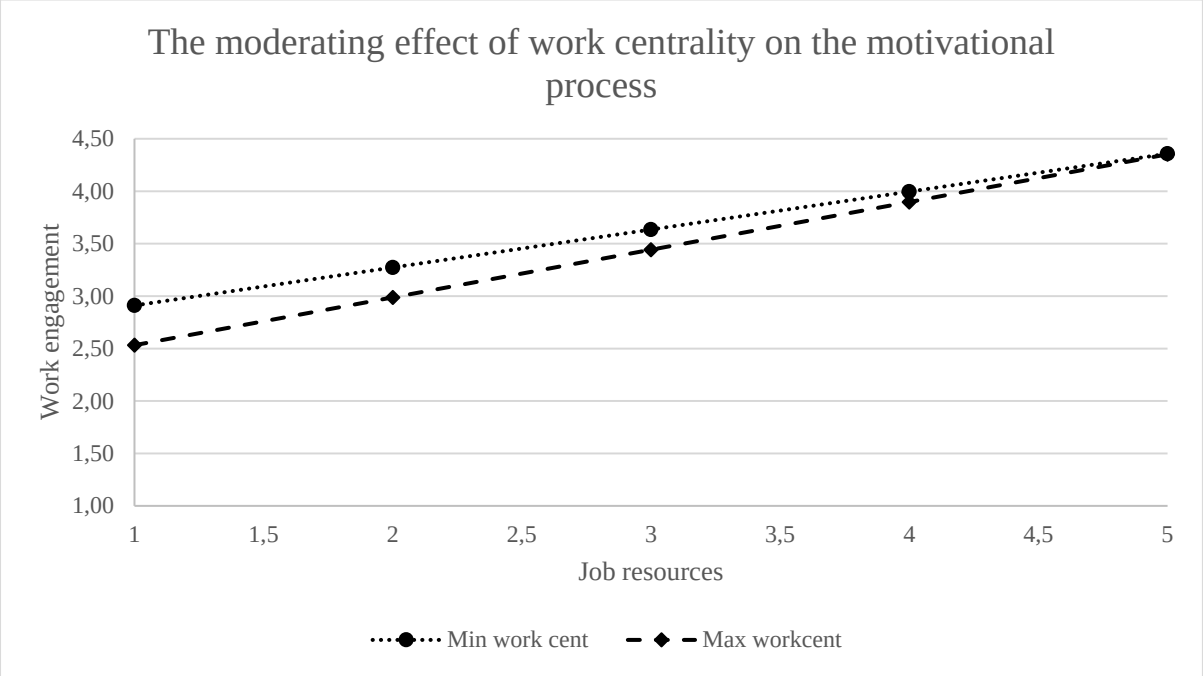


Table 3 – Multilevel model analyses on work engagement

		Null model		Model 1		Model 2		Model 3		Model 4	
Fixed effects		Parameter	T-value	Parameter	T-value	Parameter	T-value	Parameter	T-value	Parameter	T-value
Intercept		3.899**	140.049	3.906**	183.200	3.908**	187.884	3.909**	190.369	3.910**	192.077
Gender (ref. female)				-.025**	76.057	-.025**	-3.881	-.026**	-4.011	-.026	-4.029
Generations (ref. Millennials)											
Generation X				.008	1.024	.008	1.014	.009	1.159	.009	1.161
Baby Boomers				.006	.678	.006	.659	.008	.874	.008	.898
Contract (ref. Permanent contract)											
Contract of limited duration				.019	1.784	.019	1.780	.021	1.930	.021	1.930
Temporary agency contract				-.029	-1.025	-.029	-1.032	-.028	-.994	-.028	-1.001
No contract				-.036**	-2.737	-.035**	-2.689	-.034*	-2.558	-.033*	-2.514
Private versus public sector (ref. public sector)											
Public sector				.020**	2.758	.020**	2.750	.019**	2.640	.019**	2.612
Joint private-public sector				.026	1.481	.025	1.472	.027	1.545	.027	1.546
Work-family balance				.034**	7.125	.034**	7.121	.033**	7.036	.033**	7.045
Work pressure				-.001	-.319	-.001	-.335	-.001	-.145	-.0004	-.103
Role clarity				-.050**	-10.260	-.050**	-10.252	-.049**	-9.970	-.048**	-9.914
Work stress				.014**	4.611	.014**	4.610	.015**	4.862	.015**	4.885
Job security				-.012**	-4.350	-.012**	-4.346	-.012**	-4.389	-.012**	-4.282
Job satisfaction				.223**	39.443	.223**	39.435	.224**	39.632	.22**	39.664
Job resources				.408**	76.057	.408**	76.053	.405**	38.675	.403**	41.956
Work centrality						-.087	-1.461	-.031	-.571	-.085	-1.459
Work centrality * job resources										.073*	2.672
Covariance parameters		Parameter	Wald Z	Parameter	Wald Z	Parameter	Wald Z	Parameter	Wald Z	Parameter	Wald Z
Residual variance		.502**	124.683	.318**	124.683	.318**	124.683	.317**	124.607	.317**	124.608
Intercept variance	(UN 1,1)	.026**	4.023	.014**	4.058	.013**	4.045	.013**	3.945	.012**	4.034
	(UN 1,2)							-.003*	-1.963	-.002	-1.907
Job resources	(UN 2,2)							.003**	3.231	.002**	3.017
-2 Log Likelihood		67044.241		52805.520		52803.450		52719.158		52712.696	
Degree of freedom		3		18		19		21		22	

Note: *p<.05 **p<.01

Source: European Working survey (2015) & European Value Studies (2008)

5: Discussion

Two datasets are used in order to collect data to measure the relationship between job resources and work engagement, and the moderating effect of work centrality the motivational process. The EWCS 2017 and the EVS 2008 both collected data from the same 28 European member states. Due to the selection process of the respondents and the respondent sizes, both surveys have national representative data. Based on the national representative data it can be stated that if this research were to be repeated, the results would be the same and, therefore, the results of this research are externally valid. In other words, the results of this research can be generalized towards the entire working population of the 28 European member states included in this study.

Three hypotheses were derived from the literature in this study. By following the job demands-resources model, the first hypothesis claimed that job resources have a positive effect on an employees' perception of work engagement due to the intrinsic and extrinsic motivational role. The results of this study supported the theory of the job demands-resources model, job resources indeed have a positive effect on work engagement.

By following the work-environment-fit model, the second hypothesis claimed that the national perception of work centrality influences an employees' perception of his work environment and that employees who live in a European member state which has a stronger national perception of work centrality are more likely to value their work and therefore, are more likely to be engaged in their work (Uçanok, 2009). No significant relationship was found between work centrality and work engagement in this study, which indicates that the work-environment-fit model is not supported. Employees are not more or less engaged in their work when they live in a country which has a strong national perception of work centrality compared to countries with a weaker national perception on work centrality.

By following the conservation of resources theory, the third hypothesis claimed that employees who live in a European member state with a weaker national perception on work centrality may become more disengaged regarding their work when they perceive a lack of job resources as they are less likely to invest physical or psychological energy into their work (Park & Gursoy, 2012). The results from the data showed that work centrality moderates the relationship between job resources and work engagement. However, the results showed the opposite of what was expected. The negative effect of the lack of job resources is stronger for employees who live in a European member state with a stronger national perception of work centrality. This indicates that the theoretical claim is not supported and that the conservation of resources theory is not applicable to the results. One possible explanation for the unexpected results of the moderating effect of work centrality on the motivational process could be that employees who live in a European member state with a strong perception on work centrality are more likely to be workaholics. There are studies in which it is argued that those who tend to put work more central in their life (i.e. have a high score on work centrality) are significantly more likely to be workaholics (Braine & Roodt, 2011; Griffiths & Karanika-Murray, 2012; Harpaz & Snir, 2003). The definition of workaholism was shortly mentioned in the explanation of the concept of work engagement and was defined as “the compulsion to work excessively hard due to the presence of a strong, irresistible, inner drive” (Schaufeli et al., 2008, p. 175). As in both definitions of work centrality and workaholism, a person puts a strong emphasis on work in his life. If employees who live in a European member state with a strong perception on work centrality are indeed more likely to be workaholics, than the results of the moderating effect could be explained by their irresistible inner drive to excessively work hard. When a person lives in a European member state with a weaker perception of work centrality and is less likely to be a workaholic becomes disengaged and becomes less absorbed into his work, he/she will take distance from work and

will focus more on his leisure time. On the other side, those who put work more central and are more likely to be workaholics will force themselves to stay absorbed in the work due to the irresistible inner drive to work excessively hard. When those employees, who live in a European member state with a strong perception of work centrality and are more likely to be workaholics, work in an environment which lacks job resources they will not take distance from this environment but keep working in it and are therefore much more confronted with the negative effect of the absence of job resources.

Another explanation could also be that the national perception of work indicates a certain economic development and economic security of a European member state. As argued in the theoretical section, the economic development of a country produces a shift from industrialisation and modern values towards post-industrialisation and post-modern values. Maybe the stronger negative effect of the lack of job resources for those who live in a European member state with a strong perception on work centrality is explained by the economic situation of that member state. For example, employees in Eastern European countries get a low salary and they do often not have supportive managers who focus their policies on the development of their employees. When such an employee from an Eastern European member states experiences a lack of job resources at the task level, the negative effect of the lack of other resources empowers the negative effect. In addition, Eastern European countries offer less social security for those who do not have a job, which forces people to keep working in order to survive. However, both explanations need further examination in order to draw proper conclusions.

The results of this research provide new insights into the existing literature on work engagement. A strong point of this study is that no other study on work engagement has tested moderating country-level variables on the motivational process. This study showed

that country-level variables indeed influence the relationship between job resources and work engagement at the individual level. However, the effect of the country-level variables on the explained variance of work engagement is relatively weak compared to the strength of the individual-level variables. Previous research stated that the motivational process is very robust against country-level influences, but did not provide solid arguments for it (Mauno et al., 2007). The results of this study provide solid arguments for this claim and showed that individuals within a country do not show many similarities on the outcomes of work engagement and that country-level influences only have a very small effect on work engagement and the motivational process.

Limitations

The results of this study need to be taken with caution as this study encountered several limitations. First, due to the limited period of time, this study is unable to include all variables which could have an influence on work engagement. By following theoretical arguments, the most important variables are included in the analysis. However, there are far more variables which could have a significant effect on work engagement. For example, not all job resources are included which could have an influence on work engagement are included in this study. Research showed that job resources are present at four different levels; the organization, the interpersonal level, the organization of work, and the task level (Bakker & Demerouti, 2007). Only the task level job resources are included in this study, as the data did not allow to include all variables on the other levels of job resources. In addition, one of the five variables on the task level had to be removed from the analysis. The conclusions are therefore focused on the relationship between four of the five task level job resources on work engagement. It could be possible that different results will appear when more or other variables are included in the analysis.

Secondly, another weakness of this study is that work engagement is measured based on self-reported data, which could have led to biased results. One of the problems that could occur with self-reported data is that respondents report their opinion more significant than the data actually suggested. The data shows that the outcomes on work engagement are not normally distributed but are somehow negatively skewed. A lot of respondents reported the maximum score of work engagement. This could indicate that some of the respondents possibly exaggerated their opinion and could have biased the results.

At last, another issue with the data is that the survey which is used in order to collect the data on the perception of work centrality was reasonably old. The European Value study from 2008 was used in order to collect the perception of work centrality. The European Value study did recently release a new survey in 2017, but this new version did include fewer countries than its predecessor. The latest version would have made it possible to include a maximum of 16 countries, which is not enough in order to conduct an unbiased and reliable multi-level analysis. To prevent too many countries to be lost in the analysis the choice was made to use the European Value study from 2008. The limitation of this choice is that it is possible that the data is outdated.

Future research

Although this research showed that country-specific influences only have a small influence of the motivational process, future research is needed in order to conclude that the motivational process is indeed robust against country-specific influences and that policies at the level of the European Union could indeed be effective for all European member states. It could be possible that other job resources are affected by country-specific influences, in contrast to the job resources which are included in this study. Another recommendation for future research is therefore to conduct similar cross-national research which includes the complete collection

of all job resources, more recent data on work centrality, or it could focus on the effect of different country-specific influences. The causality between the relationship of work values and work engagement remains unclear, therefore it would also be interesting to conduct longitudinal research in order to study the causality. As the literature on this topic is scarce, future research could also focus on the relationship between workaholism and work centrality and the possible moderating effect on the motivational process on the individual level and the country-level.

6: Conclusion

Until date, research on the relationship between job resources and work engagement is mainly perceived as an individual and psychological process and has not focussed on country-level influences. Recent research indicated the average score of work engagement differs across European member states (Schaufeli, 2018). However, the author does not provide solid explanations for these differences. The aim of this study was to investigate whether these different scores on work engagement could be explained by the moderating effect of the national perception of work centrality on the relationship between job resources and work engagement. This resulted in the following research question; "*is the relationship between job resources and work engagement for employees moderated by the European member states' national perception of work centrality*? *And if so, how can this be explained?"*. A quantitative study is conducted on employees living in European member states in order to provide an answer to this question.

By following the conservation of resources theory, it was expected that the negative effect of the lack of job resources on work engagement would be the strongest for employees who live in a European member state with a weak perception of work centrality. The results of this

study do not support the theoretical approach of the conservation of resources theory and show the opposite of what was expected; the negative effect of the lack of job resources on work engagement is not stronger for employees who live in a European member state with a weak perception on work centrality but it is stronger for employees living in a European member state with a stronger perception on work centrality. Although the results show a significant moderating effect of the country-level variable on the relationship between job resources and work engagement, this conclusion should be drawn with caution as the explanatory power of the country-level variable is not strong. The results of this study show that that work centrality only has a relatively small effect on the relationship between job resources and work engagement, and that job resources and the included control variables explain much more of the variance on work engagement compared to the country-level variable. This supports the claim that job resources are the most important predictors of work engagement and the relationship between job resources and work engagement is very robust against country-specific influences (Mauno et al., 2007). The results of this study also support the claim that the results from researches conducted in specific countries can be generalized towards other countries or regions and that policymakers of the European Union could use researches and policies from other countries and use them in order to create policies for the entire European Union.

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Appendix:

Appendix 1: Chi-square test table

Percentage Points of the Chi-Square Distribution

Degrees of Freedom	Probability of a larger value of x^2								
	0.99	0.95	0.90	0.75	0.50	0.25	0.10	0.05	0.01
1	0.000	0.004	0.016	0.102	0.455	1.32	2.71	3.84	6.63
2	0.020	0.103	0.211	0.575	1.386	2.77	4.61	5.99	9.21
3	0.115	0.352	0.584	1.212	2.366	4.11	6.25	7.81	11.34
4	0.297	0.711	1.064	1.923	3.357	5.39	7.78	9.49	13.28
5	0.554	1.145	1.610	2.675	4.351	6.63	9.24	11.07	15.09
6	0.872	1.635	2.204	3.455	5.348	7.84	10.64	12.59	16.81
7	1.239	2.167	2.833	4.255	6.346	9.04	12.02	14.07	18.48
8	1.647	2.733	3.490	5.071	7.344	10.22	13.36	15.51	20.09
9	2.088	3.325	4.168	5.899	8.343	11.39	14.68	16.92	21.67
10	2.558	3.940	4.865	6.737	9.342	12.55	15.99	18.31	23.21
11	3.053	4.575	5.578	7.584	10.341	13.70	17.28	19.68	24.72
12	3.571	5.226	6.304	8.438	11.340	14.85	18.55	21.03	26.22
13	4.107	5.892	7.042	9.299	12.340	15.98	19.81	22.36	27.69
14	4.660	6.571	7.790	10.165	13.339	17.12	21.06	23.68	29.14
15	5.229	7.261	8.547	11.037	14.339	18.25	22.31	25.00	30.58
16	5.812	7.962	9.312	11.912	15.338	19.37	23.54	26.30	32.00
17	6.408	8.672	10.085	12.792	16.338	20.49	24.77	27.59	33.41
18	7.015	9.390	10.865	13.675	17.338	21.60	25.99	28.87	34.80
19	7.633	10.117	11.651	14.562	18.338	22.72	27.20	30.14	36.19
20	8.260	10.851	12.443	15.452	19.337	23.83	28.41	31.41	37.57
22	9.542	12.338	14.041	17.240	21.337	26.04	30.81	33.92	40.29
24	10.856	13.848	15.659	19.037	23.337	28.24	33.20	36.42	42.98
26	12.198	15.379	17.292	20.843	25.336	30.43	35.56	38.89	45.64
28	13.565	16.928	18.939	22.657	27.336	32.62	37.92	41.34	48.28
30	14.953	18.493	20.599	24.478	29.336	34.80	40.26	43.77	50.89
40	22.164	26.509	29.051	33.660	39.335	45.62	51.80	55.76	63.69
50	27.707	34.764	37.689	42.942	49.335	56.33	63.17	67.50	76.15
60	37.485	43.188	46.459	52.294	59.335	66.98	74.40	79.08	88.38

Source: http://passel.unl.edu/Image/Namuth-CovertDeana956176274/chi-sqaure%20distribution%20table.PNG

Appendix 2: Model diagnostics

There are four important assumptions which are important to check in order to decide whether a statistical test is appropriate.

1. Normally distributed data

   The data will be analysed in two ways, in order to test whether the data is normally distributed. First, I will visually check if the data is normally distributed by checking a frequency histogram (figure 1). This indicates a negative skew. The table below the histogram shows a skewness statistic of -.729 and a kurtosis of .800 (table 1). a value between 0.5 to 1 means that it is moderately skewed and a moderate kurtosis (Field, 2013). I will solve this by transforming the dependent variable. In the second row of the table the scores of the transformed (the score of the dependent variable to the power of two) data is represented. This shows a value of skewness and kurtosis below 0.5, which indicates there is no problematic skewness of kurtosis left.

   In order to prove that the untransformed data is robust against the violation of the assumptions, I will compare the transformed data with the untransformed data. In the last table, I show the results of the comparison (table 2). In this table, I compared the untransformed scores of the T-value with the T-values of the transformed data. With a sample size of 31127 respondents, all T-values above 1.6449 or below -1.6449 are significant effects. The results show that none of the values drastically changed in order to switch from significant to insignificant or the other way around. This proves that the untransformed data is robust against violating the assumption of the normally distributed data.

Figure 1:

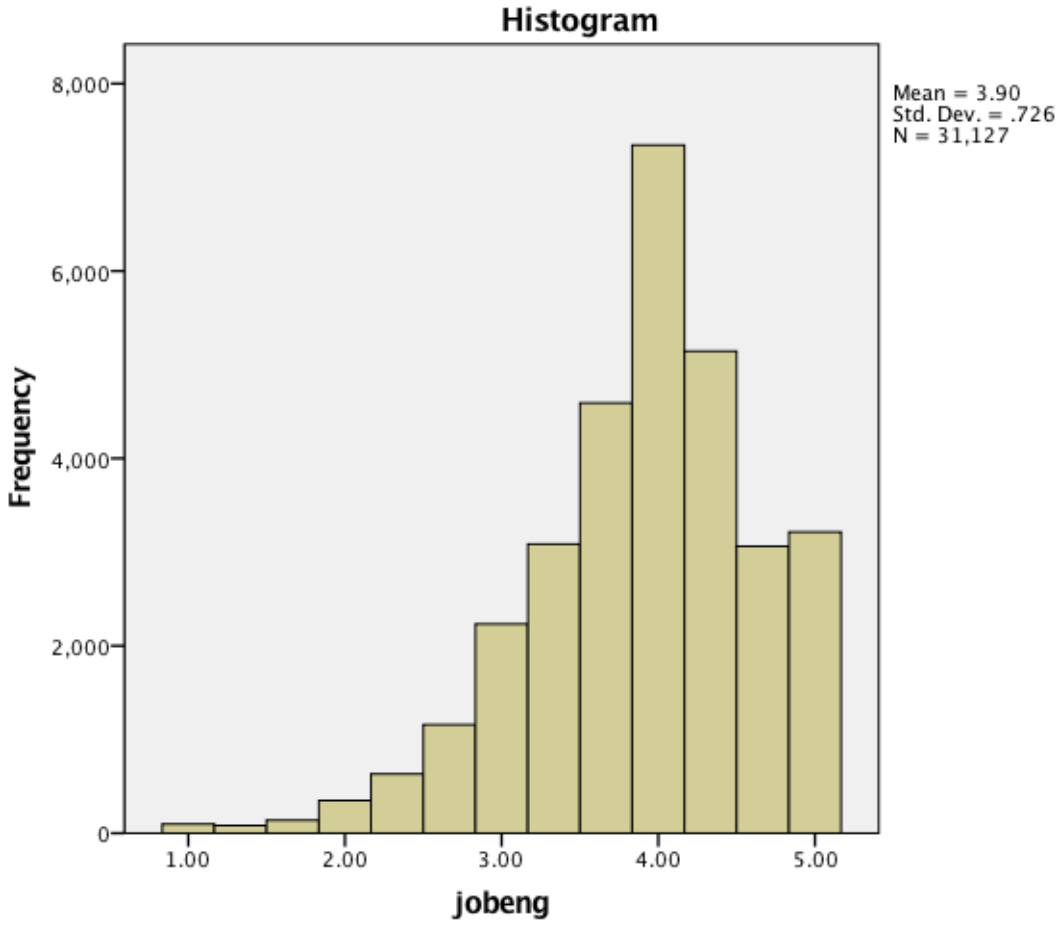


table 1:

Descriptive Statistics

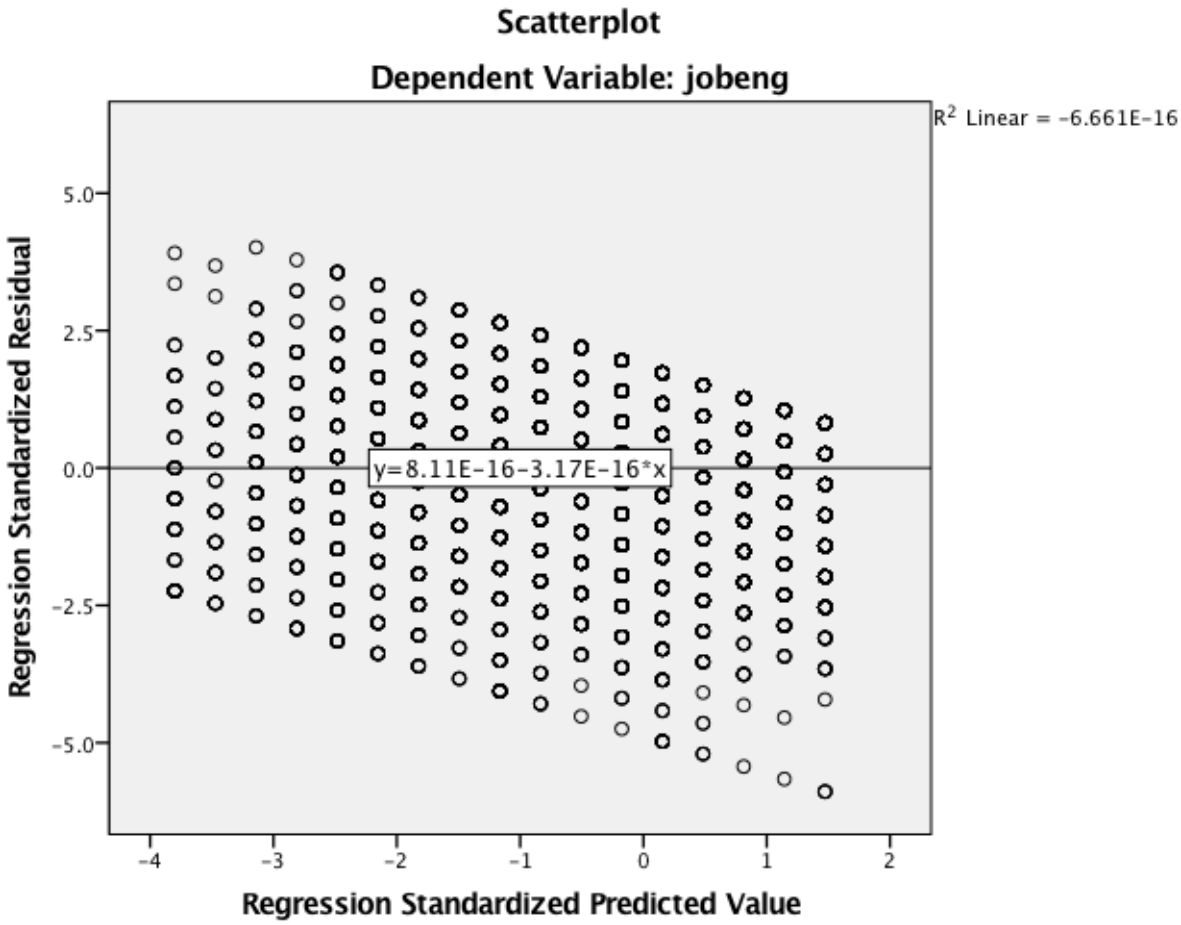
	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
jobeng	31127	-.729	.014	.800	.028
jobeng_2	31127	-.124	.014	-.393	.028
Valid N (listwise)	31127				

	Untransformed jobeng		transformed jobeng^2		Difference	
Parameter	t	Sig.	t	Sig.	Diff t-value	Diff sig.
Intercept	192,077	0,000	101,851	0,000	90,226	0,000
interc	2,672	0,012	2,353	0,025	0,319	-0,013
workcentewcsc	-1,459	0,154	-1,238	0,224	-0,221	-0,070
jobresc	41,956	0,000	47,297	0,000	-5,341	0,000
male	-4,029	0,000	-3,935	0,000	-0,094	0,000
GENX	1,161	0,245	1,070	0,284	0,091	-0,039
babyboom	0,898	0,369	0,900	0,368	-0,002	0,001

termcontr	1,930	0,054	2,593	0,010	-0,663	0,044
uitzendcontr	-1,001	0,317	-0,373	0,709	-0,628	-0,392
nocontr	-2,514	0,012	-2,372	0,018	-0,142	-0,006
publicsec	2,612	0,009	2,368	0,018	0,244	-0,009
privpubsec	1,546	0,122	1,423	0,155	0,123	-0,033
workfamc	7,045	0,000	7,426	0,000	-0,381	0,000
workpresc	-0,103	0,918	-0,979	0,327	0,876	0,591
workstressc	4,885	0,000	4,835	0,000	0,050	0,000
rolclarc	-9,914	0,000	-10,568	0,000	0,654	0,000
jobsatisc	39,664	0,000	37,862	0,000	1,802	0,000
jobsecc	-4,383	0,000	-3,843	0,000	-0,540	0,000

2. Homogeneity of variance

   The second assumption I need to test is the homogeneity of the variance. This means that the variance of the outcomes on the dependent variable should be stable across all values from 1 to 5. One way to check if the variance of the data is homogeneous is to create a scatter plot and place the standardized predicted values on the x-axis and the standardized residual variance on the y-axis. The distance between the outcome variable, which is, in this case, the residual variance, should be equal for all predicted values. Plotting the residual variance with the predicted values of all variables which are included in the analysis for this study shows the following scatterplot:



By looking at the scatterplot we can see that the variance of the analysis is homogeneous. Another part we can conclude from this scatterplot is that the relationship between the predicted values and the residual variance is linear, which is also necessary in order to conduct a proper regression analysis.

3. Independence of the variables (multicollinearity)

   Multicollinearity makes it difficult to interpret the individual effects of variables, as a strong relationship exists between two variables. Multicollinearity will increase the standard errors of the slope coefficients, makes the effect sizes of the slope coefficients less trustworthy and it limits the size of the explained variance. In order to prevent multicollinearity to occur in the analysis, a collinearity diagnostic is analyzed. Variables which score a higher value of 10 on the variation inflation factor

(VIF) will be deleted from the analysis (Field, 2013). The results of the collinearity check are presented in the following table:

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.912	.008		514.049	.000		
	workcentewcsc	-.126	.010	-.057	-12.281	.000	.935	1.069
	jobresc	.410	.005	.428	76.469	.000	.640	1.561
	male	-.030	.007	-.021	-4.622	.000	.978	1.022
	GENX	.005	.008	.003	.619	.536	.695	1.438
	babyboom	.004	.009	.003	.468	.640	.681	1.469
	termcontr	.011	.011	.005	1.000	.317	.896	1.116
	uitzendcontr	-.031	.029	-.005	-1.083	.279	.975	1.026
	nocontr	-.050	.013	-.018	-3.933	.000	.914	1.094
	publicsec	.021	.007	.013	2.772	.006	.918	1.090
	privpubsec	.025	.017	.007	1.459	.145	.977	1.023
	workfamc	.037	.005	.038	7.650	.000	.828	1.208
	workpresc	-.006	.004	-.008	-1.509	.131	.779	1.284
	workstressc	.017	.003	.028	5.694	.000	.852	1.174
	rolclarc	-.049	.005	-.049	-10.057	.000	.830	1.205
	jobsatisc	.214	.006	.204	37.806	.000	.689	1.451
	jobsecc	-.013	.003	-.024	-4.916	.000	.842	1.187

Dependent Variable: jobeng