Social Support in offices:
Elements, driving factors and their influence on Work Engagement

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ABSTRACT (EN)

The influence of the *Professional Dimension* of Social Support on work engagement has often been the topic of investigation and is mostly seen as the decisive and only dimension for investigating *Social Support* in organizations. Despite the known influence of *Social Support* on *Work Engagement,* there is only little attention paid to the *Personal Dimension* of the employee/co-worker and employee/superior relationship. This thesis first examines the relationship between "liking" (having a good personal relationship) and "working supportively together "(having a good professional relationship) and afterwards investigates their influence on *Work Engagement*. Additionally the possible negative influences of too strong personal relationships and the existence of common good practices and work environment attributes in organizations that drive *Social Support* is investigated. For the Co-worker relationship Work Engagement found the *Companionship* and *Informational Dimension* to positively and the *Emotional* and *Instrumental Dimension* to negatively affect *Work Engagement.* For both, the Co-worker and Supervisor relationship, the *Personal*- and *Professional Support* levels are highly correlated and too high *Supervisor Personal Support* that don't match the employees Power Distance Index negatively effects *Work Engagement*. Lastly regular team and supervisor meetings, as well as the recognition of good performance and the existence of break out spaces are found to positively affect *Social Support* levels.

ABSTRACT (PT)

A influência da Dimensão Profissional do Apoio Social sobre o engajamento no trabalho tem sido freqüentemente tema de investigação e é sobretudo vista como a dimensão decisiva e única para investigar o Apoio Social nas organizações. Apesar da conhecida influência do Apoio Social ao Trabalho, há pouca atenção prestada à Dimensão Pessoal da relação empregado / colega de trabalho e empregado / superior. Esta tese examina primeiramente a relação entre "gostar" (ter uma boa relação pessoal) e "trabalhar solidariamente em conjunto" (ter uma boa relação profissional) e, posteriormente, investigar sua influência no Trabalho. Além disso, são investigadas as possíveis influências negativas de relacionamentos pessoais muito fortes e a existência de boas práticas comuns e atributos do ambiente de trabalho nas organizações que impulsionam o Apoio Social. Para a relação de colega de trabalho, encontramos a dimensão de companheirismo e informação como positiva e a dimensão emocional e instrumental para afetar negativamente o engajamento no trabalho. Para ambos, o relacionamento de Colaborador e Supervisor, os níveis de Suporte Pessoal e Profissional estão altamente correlacionados e um Suporte Pessoal de Supervisor muito alto que não corresponde ao Índice de Distância de Poder dos funcionários afeta negativamente o Envolvimento no Trabalho. Por fim, as reuniões regulares de equipe e supervisor, bem como o reconhecimento do bom desempenho ea existência de espaços de ruptura, afetam positivamente os níveis de Apoio Social.

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CHAPTER I: Introduction

The concept of *Work Engagement* does not only gain increasingly attention in the academic research, also corporations are starting to realize the importance of a fully engaged workforce. This trend is reflected in the increasing investments in engagement improvements, like workshops, trainings and consultancy work, which reached $720 million in 2012 according to an industry report of Bersin & Associates (2012). While this might seem a lot om the first sight, this amount relativizes when it is compared to the estimated annually losses of U.S companies, due to unengaged employees: Regarding to Forbe's Victor Lipman (2013) in his article "Why are so many employees disengaged?" the U.S. Bureau of National Affairs estimates a total loss of $11 billion per year.

Also the strong relationship between *Work Engagement* and profitability is investigated and confirmed in a growing amount of studies. In its 2011 WorkTrends report KENAX (2011) interviewed more than 31,000 workers from 28 countries and found that organizations with higher levels of employee engagement show significantly higher annual net income. Furthermore, in a Gallup study Annamarie Mann and Ryan Darby (2014) argue, that "Workgroups with high levels of employee engagement experience 22% higher profitability and 21% higher productivity compared with workgroups with low levels of engagement. They also experience 65% lower turnover and 10% higher customer ratings than workgroups with low engagement."
But the known benefits of an engaged workforce go beyond increased financial performance: High levels of engagement lead to fewer personal transfers to other companies (Lange et al. 2008), a smaller likelihood of experiencing *Occupational Burnouts* and a lower sickness duration of employees (Schaufeli et al. 2009).

All this emphasizes the need of a deeper and more structured understanding of the determinants of the *Work Engagement* measurement. This is particularly important in times of an increasingly competitive business environment, in which attracting and keeping high potential workers is a key element of organizational performance. In a recent Harvard Business Review article, Jacob Morgan (2017) claims, that organizations have to "redesign employee *experience,* creating a place where people want, not just need, to work" in order to make real, long-term gains in *Work Engagement.*

An important step towards a more structured research in this area has been made by Bakker and Demerouti (2008), when they first suggested a model of *Work Engagement*. They identified three main influence factors: *Personal Resources*, *Job Resources* and *Job Demands*. While *Job Demands* represent the skills necessary for a specific position and the resulting job stress, *Job Resources* describe the work environment (like career possibilities, remuneration, training, etc.) and *Personal Resources* reflect the employee's character and general attitude (like optimism and confidence). Since the development of *Personal Resources* like optimism and self-esteem require intensive and long term coaching, organizations are left with little choice to react to the prevalent trend of increasing *Job Demands* (Schaubroeck et al. 2001). Consequently the focus for providing an engaging and healthy work environment must lay in boosting *Job Resources* (Bakker et al. 2007).

One of the best known variable which acts as a "buffer against job stress" (Haines et al. 1991) in the *Job Resources* category is *Social Support*. With its origins in healthcare and nursing research the *Social Support* concept was transferred to the occupational health research and even though the impact of *Social Support* on *Work Engagement* and many other job related health and effectiveness measurements has been the subject of investigation in many academic articles before, an incoherency in the definition of the *Social Support* variable and the instruments used to identify its level can be found. There appears to be no overall agreement on the need to differentiate between *Co-worker* and *Supervisor Support*, as well as between *Personal-* and *Professional Support*. Additionally, different questionnaires measuring Social Support as an element in the *Job Resources* category can be found.

Besides the elements and sources of *Social Support*, another area of interest are the possible influences of good practices and "modern" work environments on this variable. Does the approach of providing employees with a comfortable and collaborative work environment lead to higher levels of *Social Support* and might this in turn drive Work Engagement?

This thesis will first introduce different academically concepts that provide a foundation for each component of the *Social Support* variable (Co-worker/Superior Relationship with respectively Personal/Professional Support) and then describe the lack of agreement prevailing in the literature on the basis of this components. To evaluate the influence and significance of every component individually, a questionnaire for employees working in an office environment that differentiates between *Professional*- and *Personal Support* for both, the supervisor and co-worker case is created and the correlations and influence of the components are analyzed. Finally the existence of common good practices and work environment attributes which may positively affect the *Social Support* variable is investigated.

CHAPTER II: Background and Literature Review

2.1 Work engagement

2.1.1 Definition and dimension

In the past, Psychological research mainly focused on negative emotions, leading to a ratio of 14 to 1 scientific paper investigating negative states of mind rather than the influence of positive emotions on various health and performance measurements. (Myers 2000). The same negativity bias has shown to be true for occupational health psychology, with a similar ratio of negative work-related outcomes like burn out to positive ones in the **Journal of Occupational Health Psychology** from 1960 onwards (Schaufeli and Bakker 2004). Growing criticism about this negativity bias not only led to an increasing popularity of the recently proposed *Positive Psychology* approach, but also paved the way for the field of *Positive Organizational Behavior* (Bakker and Schaufeli 2008). Luthans and Church (2002, p. 59) defined *Positive Organizational Behavior* as "the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement in today's workplace". One of the most discussed constructs in this area is the concept of *Work Engagement,* which was introduced by Kahn (1990) as a positive state of being physically, cognitively, and emotionally connected to your work. Even if the academic literature has seen different definitions and even doubts about the clear distinction of *Work Engagement* from other concepts like *Job Involvement* and *Organizational Commitment* (Christian et al. 2011; Hallberg and Schaufeli 2006), all view *Work Engagement* as an energy, that is focused towards organizational goals (Macey 2009). The majority of scientific paper published in the last decade in this field tend to follow Schaufeli and Bakker (2004), who consider *Work Engagement* as "a positive, fulfilling, work-related state of mind that is characterized by *Vigor*, *Dedication* and *Absorption*". *Vigor* is characterized by feeling energized, a strong willingness to invest effort and being able to persist difficulties in ones work. Feeling significant, enthusiastic, inspired and a certain pride in doing a challenging job are attributes related to *Dedication*. Finally, *Absorption* is determined by feeling fully concentrated and happily engrossed in ones work (Bakker 2011).

An adverse relationship between the concept of *Work Engagement* and *Occupational Burnout* can be found by comparing its fundamental characteristics. *Burnout* is a response to excessive

occupational stress and can be described by emotional exhaustion, cynicism and lack of professional efficacy (Maslach and Jackson 1982). However, emotional exhaustion and cynicism are seen as the core dimensions (Green et al. 1991). The lack of emotional resources (emotional exhaustion) can theoretically be considered as the opposite of feeling energized and a strong willingness to invest effort in ones work (*Vigor* dimension of *Work Engagement*) and a cynical attitude towards ones job as the contradictory of being *Dedicated* (Schaufeli et al. 2002b; Maslach and Leiter 2014).

There are several instruments to measure *Work Engagement*, from which the **Utrecht Work Engagement Scale (UWES)** can be considered as the most used one with the most academic validations (Bakker and Leiter 2010; UWES Manual 2003). In line with its definition, the original **UWES** questionnaire measures the three sub dimensions of *Work Engagement* (*Vigor, Dedication and Absorption*) with seventeen statements, which the interviewee can agree or disagree on a scale from zero to six. The approach of examine the three factors separately has been proven to be superior to other models which only include one dimension, like general wellbeing (Schaufeli et al. 2008; Schaufeli et al. 2002a). Furthermore a high correlation between the *Vigor*, *Dedication* and *Absorption* variables with values exceeding 0.65 can be found (Demerouti et al. 2001), while staying relatively stable over time with two year stability coefficients of .30, .36, and .46 respectively (Bakker et al. 2003). In terms of internal consistency, the Cronbach´s alpha for the **UWES** scale usually ranges between .80 and .90 (Demerouti et al. 2001; Durán et al. 2004; Montgomery et al. 2003), which goes beyond .70 what the literature suggest as guidance level for a reliable instrument (Nunnally and Bernstein 1994). Schaufeli et al. (2006) showed that the original **UWES** questionnaire can be shortened to a version with only nine items (**UWES-9**), while keeping the above validation and descriptive factors in a study in ten countries including Austria, Belgium, Germany and the Netherlands.

2.1.2 Consequences of *Work Engagement*

The importance of an engaged workforce and the related benefits for employee well-being and organizational performance are wide ranging and start from *Work Engagement* itself being a positive and enjoyable state of mind (Schaufeli et al. 2002b). Second, engaged employees are healthier and are less likely to experience *Occupational Burnouts*, since the two concepts can be seen as antipodes to each other (Demerouti et al. 2001; González-Romá et al. 2006). Furthermore,

Schaufeli et al. (2009) found a negative relationship of *Work Engagement* with the duration and the frequency of involuntary absence due to sickness. Third, it positively affects performance in various ways, like extra-role performance (Bakker et al. 2004), team effectiveness due to spillover effects (Bakker et al. 2006), client satisfaction (Salanova et al. 2005), academic performance in students (Schaufeli et al. 2002a) and financial returns (Xanthopoulou et al. 2009).
This performance gains results from engaged employees being able to create their own resources (Bakker and Demerouti 2007) and being capable of focusing their energy on organizational goals (Macey 2009), even in stressful events (Britt et al. 2001). Fourth and lastly, it drives organization commitment (Demerouti et al. 2001) and therefore leads to lower employee transfers to other companies (Lange et al. 2008).

2.1.3 A model of *Work Engagement*

For organizations a crucial importance lies in understanding the factors that drive *Work Engagement*, to be able to actively stimulate them and profit from the related performance gains. An important step towards a more systematic analysis was made by Bakker and Demerouti (2008), when they first suggest a "model towards *Work Engagement*". They identified three key-areas of influence: The specific requirements (professional, emotional, mental, and physical) of the Job, labeled as *Job Demands*, one's *Personal Resources* (enthusiasm, self-efficacy and self-esteem) and characteristics of the working environment (autonomy, coaching and social support) termed *Job Resources*. While *Job Demands* negatively influence *Work Engagement*, *Personal Resources* and *Job Resources* function as supportive assets to meet high *Job Demands*. Considering that employee's *Personal Resources* are more difficult to develop, the *Job Resources* variable is from major interest for organizations. This is especially true in times, where organizations need to provide more healthy and engaging work environments to make up for the trend of increasing *Job Demands* (Schaubroeck et al. 2001). Furthermore *Job Resources* have been found to play an "intrinsic motivation role" due to their consistency with basic human needs like autonomy, relatedness, competence (van den Broeck et al. 2008) and are suspected to trigger a positive gain spiral: An increase in *Job Resources* lead to an increase in *Work Engagement*, which in its turn, further increases *Job Resources* (Schaufeli et al. 2009).

2.2 Social Support

2.2.1 Definition and importance

One of the most significant and best known attributes in the *Job Resources* category is *Social Support (Social Support)*, which has been shown to be associated with *Work Engagement* by providing a buffer against job stress (Haines et al. 1991; Schaufeli und Bakker 2004; Kaufmann und Beehr 1986; Sarason et al. 1990).

Social Support has been defined as "the extent to which a job provides opportunities for assistance and advice from supervisors or coworkers" (Christian et al. 2011, p. 99) and incorporates an *Instrumental*, *Informational*, *Emotional* and *Companionship* dimension (Rodriguez und Cohen 1998; Wills 1991; Uchino 2004). *Instrumental Social Support* includes direct, active assistance from co-workers or supervisors which help to reduce the workload, while the benefits of *Informational Social Support* steam from communicative advice or guidance given by one of this groups. Being concerned about someone's personal wellbeing and showing empathy towards someone is considered as *Emotional Support* and lastly the feeling of friendships and social belongingness to a group is called *Companionship Support*. According to the different purposes and objectives of those *Social Support* dimensions, the first two dimensions (*Instrumental* and *Informational*) can be considered as *Professional Support* and the latter two (*Emotional* and *Companionship*) as *Personal Support*.

Further distinctions between *Perceived Social Support* (is support offered effectively and at the right times) and *Received Social Support* (do support offerings lead to actions when needed) can be made (Taylor 2011), where the *Informational* and *Companionship* dimensions can be seen as *Perceived Personal* and *Professional Support* and the *Instrumental* and *Emotional* as the *Received Personal* and *Professional Support*.

The measurement of *Social Support* can be measured in terms of *Structural* or *Functional Support* (Blechman und Brownell 1998). The structural side of *Social Support* deals with the existence and quantity of social relationships, like amount of friends, group membership and marital status, as well as the strength and depth of these relationships and is often investigated based on the existence or contact with potentially supportive persons. A problem with this measurement may arise when the size of the social network is uncorrelated to the actual received support (Sherbourne und Stewart 1991). Therefore the *Functional Support* is seen as the more essential aspect of *Social*

Support (Chronister et al. 2006) and refers to how well social relationships serve specific functions like the mentioned dimensions: *Emotional Support*, *Companionship Support*, *Informational Support* and *Instrumental Support*.

2.2.2 Explanatory concepts and relation to *Social Support* dimensions

The importance of *Social Support* is based on three different theories: The fundamental human motivation for interpersonal attachment, the *Social Exchange Theory* and the associated feeling of *Psychological Safety*. Baumeister and Leary (1995) argue, that there is a need for frequent, no aversive interactions within an ongoing relational bond and that belongingness has multiple and strong effects on emotional patterns and on cognitive processes, affecting self-reported physical and mental health (Walton und Cohen 2011; Kawachi und Berkman 2001). From a *Social Exchange* point of view (Blau 1964), providing *Social Support* to employees triggers a sense of obligation to pay back this favor, by being more committed to their work (Eisenberger et al. 1997; van der Heijden et al. 2010). *Psychological Safety* provides employees with the possibility to show and employ themselves (Kahn 1992) with an important aspect of this safety steaming from the amount of care and support employees receive. In terms of *Work Engagement* this is important, since psychological safe environments enable employees to be "fully present" at work, without having to fear possible negative consequences of mistakes, stimulate learning behaviors (Carmeli et al. 2009) and promotes involvement in creative work (Kark und Carmeli 2009). Kahn (1990) and Edmondson et al. (2004) found trusting interpersonal relationships, as well as supportive management characterized by openness and supportiveness, to promote *Psychological Safety*.
Each of this three concepts (The need to belong, *Social Exchange Theory* and *Psychological Safety*) can be separated into reflecting the two different sources of *Social Support*: Belonging to a supportive group of co-worker (Johnson and Hall 1988; Sherony and Green 2002; Xanthopoulou et al. 2008) and feeling responsible towards a supervisor or towards the organization as a whole (Eisenberger et al. 2002; Rhoades and Eisenberger 2002; Saks 2006; Wayne et al. 1997). While the need to belong reflects the importance of the relationship of the employees with their colleagues, *Social Exchange Theory* provides a foundation for the influence of the employee/supervisor relationship. For a *Psychological Safe* environment, both relationships have to be satisficing, since only than employees will be able to fully focus on their work without having to worry about problems with either their co-workers or their supervisor.

Additionally a differentiation between the four dimensions of *Social Support* (instrumental, informational, emotional and companionship) can be made. Being part of a group is mostly determined by emotional and companionship aspects like care, personal trust and openness, whereas having the feeling to own something to either ones co-worker or ones supervisor can be the result of receiving support related to any of the four dimensions. Also *Psychological Safety* incorporates aspects of every dimension: Emotional and companionship characteristics are found in attributes like attention, confidence, flexibility, lack of threat and group dynamics along with instrumental and informational elements like competence, assistance, resilience and consistency.

2.3 The examination of Social Support

Since the concept of *Social Support* and its first definition was made in the healthcare and nursing literature (Barrera et al. 1981), transferring this concept to the *Work Engagement* research caused a prevalent lack of agreement of which aspects of *Social Support* are important for the *Work Engagement* research (Langford et al. 1997). Various instruments are used to identify *Job Resources* (which includes *Social Support*) like the **General Nordic Questionnaire for Psychological and Social Factors at Work (QPS-Nordic)** (Bakker et al. 2007; Lindström et al. 2000; Hakanen et al. 2006) and the **Questionnaire on the Experience and Evaluation of Work (QEEW)** (Schaufeli et al. 2009; Sverke et al. 2010; Hu et al. 2011). Furthermore, some additional questionnaires for specific industries exist, like the **Dentist's Experienced Job Resources Scala (DEJR)** (Hakanen et al. 2008; Gorter et al. 2006).

With the various types of instruments used to determine *Job Resources*, the way of investigating *Social Support* as a variable in this category changes with them: In contrast to the **QEEW**, the **QPS-Nordic** only includes *Instrumental-* and *Informational Social Support* in its social interactions category, but additionally contains *Social Support* of this dimensions given by outsiders (e.g.: If needed, can you talk with your spouse or any other close person about your work-related problems?). Whereas the **QEEW** clearly differentiates between relationship with colleagues and relationship with supervisor, it does not make this differentiation between the four dimension of *Social Support* (e.g.: If necessary, can you ask your colleagues for help?). Furthermore, while the **QPS-Nordic** does only include appreciation from ones supervisor and does not ask for the general affiliation with colleagues and supervisor, the **QEEW** contains co-worker appreciation and asks for general sympathy for colleagues and supervisor.

QEEW	QPS-Nordic
Relationships with colleagues Can you count on your colleagues when you encounter difficulties in your work? If necessary, can you ask your colleagues for help? Do you get on well with your colleagues? Do you have conflicts with your colleagues? In your work, do you feel appreciated by your colleagues? Do you experience any aggressiveness from colleagues? Are your colleagues friendly towards you? Is there a good atmosphere between you and your colleagues? Have there been any unpleasant occurrences between you and your colleagues?	**Relationships with colleagues** If needed, can you get support and help with your work from your coworkers?
Relationship with your superior Can you count on your superior when you come across difficulties in your work? If necessary, can you ask your superior for help? Do you get on well with your superior? Do you have conflicts with your superior? In your work, do you feel appreciated by your superior? Do you experience any aggressiveness from your superior? Is your superior friendly towards you? Is there a good atmosphere between you and your superior? Have there been any unpleasant occurences between you and your superior?	**Relationship with your superior** If needed, can you get support and help with your work from your immediate superior? Are your work achievements appreciated by your immediate superior? Does your immediate superior encourage you to participate in important decisions? Does your immediate superior help you develop your skills?
	Relationship with outsiders Do you feel that your friends / family can be relied for support when things get tough at work?

Table 1: Differences QEEW and QPS-Nordic

2.4 Possible negative effects of Social Support

At the same time the possible negative consequences of a too close personal relationships shouldn't be left unmentioned. Morrison und Nolan (2007) argue, that too close relationships lead to a prioritization of the friendship above organizational responsibilities, which might hurt employee performance. Due to the critical and controlling nature, this is especially important for the employee superior relationship. Therefore organizational managers have to find the right balance

between promoting sociability and keeping a professional atmosphere (Kram und Isabella 1985). Since the effectiveness of managerial practices does not transfer across ethnic, cultural, and national boundaries (Bond and Smith 1996) the optimal balance of *Social*- and *Professional Support* possibly varies between different countries and cultures (Sadler und Hofstede 2016). An indicator for the optimal ratio might be found in a countries *Power Distance Index (PDI).* The *PDI* measurement was introduced by Hofstede (1984) and describes the general acceptance of unequal power distribution in organizations across countries. In cultures with higher *PDI* levels, members are more likely to conform to a strict hierarchy, which reflect *Social Support* aspects like knowledge sharing (Tsai 2002), and accept unequal power distributions. In low *PDI* level environments authority figures and subordinates tend to feel more alike and to work closely together. Additionally the fear of punishment for disagreement with managers is more prevalent in countries with high *PDI* level (Mead 2005). All this indicates that the *PDI* is related to the way and quantity of information exchanged between supervisors and employees (Bialas 2009).

2.5 Proposed model

This Thesis tries to shed light onto this disparity by testing an overall model of *Social Support* on office workers, which first differentiates between the coworker- and supervisor relationship and later combines the *Instrumental* and *Informational* dimension and investigates those as *Professional Support*, while the counterpart is labeled as *Personal Support* and contains the *Emotional* and *Companionship* dimension. The restriction to office workers was made due to the common characteristics of this working environment, which helps to limit biases in the analysis. Due to the previously mentioned difficulties with the structural measure, the focus lies herby on the functional side of *Social Support*.

Furthermore, aspects related to the structural side of *Social Support* are examined in the existence of common elements that stimulate the development and quality of social relationships in organization. Giving employees the possibility to more frequent interactions by providing social spaces, open working environments, regular team meetings and social events might stimulate the growth of social networks and lead to stronger social relationships, which consequently drives *Social Support*. The connection of *Social Support* and corporate cultures can be found in the definition of it in the oxford dictionary: “The ethos of a particular company, or that of large businesses in general; the approach a company takes towards the working environment of its staff”.

This indicates that the working environment, which can be seen as the existing extent and relation of *Professional*- and *Personal Support* defines the corporate culture. To investigate this connection, specific work environment attributes like the availability of social spaces and canteens, as well as good practices like regular team meetings are linked to *Social Support* levels.

Social Support:

	Supervisor Relationship	**Co-worker Relationship**
Instrumental Support **Informational Support**	Supervisor Professional Support	Co-worker Professional Support
Emotional Support **Companionship Support**	Supervisor Personal Support	Co-worker Personal Support

Table 2: The considered Social Support concept

Besides the general performance and its statistical measures of the proposed *Social Support* model it's expected to find:

Hypothesis 1 (H1): *Personal*- and *Professional Support* are highly correlated for the employee co-worker relationship.

Hypothesis 2 (H2): The ratio of *Professional* to *Personal Support* depends on the countries and corporate culture, but is similar for the co-worker and the supervisor relationship in-between those.

Hypothesis 3 (H3): *Personal Support* from Supervisors that don´t match individual *Power Distance Indexes*, negatively influences *Work Engagement.*

Hypothesis 4 (H4): Specific work environment attributes and good practices positively affect *Social Support.*

In the following section the methodology of this research is demonstrated in more detail, the findings are presented in the third chapter after which the fourth one concludes the thesis and is followed by a discussion.

CHAPTER III: Methodology

3.1 Samples and Procedure

A questionnaire targeting office workers in various branches of industry in different countries was developed with the help of the research software Qualtrics. The distribution mainly took place over the career network LinkedIn, where individuals working in office environments were target directly and ask to answer the survey. 120 (with 43.2% being female) participants from 24 countries (with 33.6% coming from Portugal, 25.6% from Germany, 6.4% from India and 4.8% from the USA) working in 18 different branches of industries (with 18,4 % working in the professional scientific or technical service, 14.4% working in finance and 13.6% in manufacturing) anonymously answered the 21 question extensive online questionnaire. Over half of the population (56%) is between 25-34 years old and 59.2% is holding a master's degree.

3.2 Measurement instruments

Work Engagement was assessed with the 9-item **Utrecht Work Engagement Scale (UWES-9)** (Schaufeli et al. 2006). The three dimensions of *Work Engagement* (Vigor, Absorption and Dedication) is measured with three items, each asking for the level of agreement on a statement (e.g. 'When I get up in the morning, I feel like going to work'). Most items included in the questionnaire are scaled on a scale from 0 (Never) and 6 (Always/ Every day).

Job Demands were examined by a slightly modified version of the four categories (pace and amount of work, mental and emotional load, physical effort and work variety) from the **Questionnaire on the Experience and Evaluation of Work (QEEW)** (van Veldhoven and Meijman 1994) with two statements for every item respectively. In order to limit biases and follow a consistent method in the questionnaire, the original question style objects (e.g. 'Do you work under time pressure?') where rephrased into statements and some have been specified (e.g. 'Even when I manage my time well, I have
to work under time pressure').

Original question	Used in the questionnaire
Job Demands	
Do you have too much work to do?	In my current role, I have too much work to do
Do you work under time pressure?	Even when I mange my time well, I have to work under time pressure
Does your work demand a lot of concentration?	My work demands a lot of concentration
Do you have to be attentive to many things at the same time?	My job requires me to perform several tasks at the same time
Does your work demand a lot from you emotionally?	My Job demands a lot from me emotionally
Are you confronted with things that affect you personally in your work?	In my work I am confronted with things that affect me personally
Does your work sufficiently require all your skills and capacities?	My job allows me to use several skills and capacities
Do you have enough variety in your work?	I perform several different tasks during a work day
Job Resources	
Does your job offer you opportunities for personal growth and development?	My firm gives me the chance to develop myself and acquire new soft skills
Do you learn new things in your work?	My firm offers me opportunities to further educate myself professionally
Can you interrupt your work for a short time if you find it necessary to do so?	I can autonomously decide when and how long I take breaks at work
Can you decide how your work is executed on your own?	I have autonomy to decide how my work is executed
Does your work provide you with direct feedback on how well you are doing your work?	My supervisor provides me with direct feedback on how well I am doing my work

Do your colleagues inform you about how well you are doing your work?	My supervisor give me advise on how to improve my work
Do you receive sufficient information on the results of your work?	I talk about the purpose and results of my work with my supervisor
Do your colleagues inform you about how well you are doing your work?	My co-workers provide me with advice on how to improve my work
Does your work provide you with direct feedback on how well you are doing your work?	Me and my co-workers give each other feedback on our work
Do you receive sufficient information on the purpose of your work?	I talk about the purpose and results of my work with my co-workers
Do you think you are paid enough for the work that you do?	I am fairly paid for the work that I do
Do you think that the pay in your company is lower than in comparable firms?	The salary in my company is higher than in comparable firms
Does your job give you the opportunity to be promoted?	My job gives me the opportunity to be promoted
Is your work progressing differently from the way you would have wanted?	I face other problems at my work
Do you have to do work which is too difficult for you?	I have to do things in my work that I dislike

Table 3: Changed questions from original questionnaire

The 15-statements investigating *Job Resources* are also based on the **QEEW** and were subject to the same changes as the *Job Demands* objects (2 for investigating learning opportunities, 2 for independence, 4 for information, 2 for remuneration and 1 for career possibilities. Additionally two control variables to correct for other problems at the workplace were included (e.g. 'I face other problems at my work').

Even with *Social Support* being an item belonging to the *Job Resources* category it was split up into *Co-workers Social Support* and *Supervisor Social Support* and investigated separately in the fourth question of the survey. Both parts investigate the four mentioned dimension of *Social Support* (*Instrumental*, *Informational*, *Emotional* and *Companionship*) with three statements per dimension. Due to the different nature of the relationships, some statements were slightly modified for the supervisor relationship to more clearly reflect the actions of interest (e.g. 'My co-workers

and I show interest in each other's work' to 'My supervisor informs himself about my work also in-between deadlines).

Co-worker Social Support	**Supervisor Social Support**
I know about the personal life of my colleagues	My supervisor and I speak about work unrelated things
My colleagues and I often speak about work unrelated things	I know about the personal life of my supervisor
I can speak about intimate problems with my co-workers	I can speak about intimate problems with my supervisor
I can rely on my colleagues to help me with personal problems	I can rely on my supervisor to help me with personal problems
My colleagues are my friends	My supervisor and I are friends
My colleagues are interested in my personal well-being	My supervisor is interested in my personal well-being
I speak with my colleagues about the challenges, opportunities and motivation of my work	I can truly speak about difficulties and problems in my work with my supervisor
My co-workers and I show interest in each other's work	My supervisor offers me professional advice when I have a work-related problem
My co-workers would have the skills and knowledge to perform my work	My supervisor frequently asks if I need help with my work
My co-workers frequently offer me to help me with my work	My supervisor has the skills and knowledge to perform my work

My co-workers offer me professional advice when I have a work-related problem	My supervisor informs himself about my work also in-between deadlines
My co-workers and I often assist each other in ones work	My supervisor sometimes assists me with my work due to the amount of work, tight deadlines or the complexity of the tasks

Table 4: Changed questions for co-worker and supervisor Social Support

The existence of specific workplace attributes and good practices was assessed with 15 Yes/No statements with 6 describing the work environment and 9 good practices.

The individual *PDI* was assessed by the *PDI* section of the *Geert Hofstede Cultural Questionnaire,* which consists of five pairs of opposing statements (e.g. 'Children should be taught that their opinion is as important as their parents' opposed by 'Children should be taught to never question their parent's authority'). Respondents are asked, with which statement they agree more on a scale where the middle answer represented an equivalence between the two statements and the most left/right the strongest agreement to the left/right statement.

The last section of the questionnaire contains general demographic questions (Country of origin, Country of residence, Age, Sex, Sex of the supervisor, Industry, Position) and a section examining *Personal Resources.* The four statements from the **The General Self-Efficacy Scale (GSE)** (Jerusalem und Schwarzer 1979) are scored on the same agreement scale from 0 (Never) and 6 (Always/ Every day) as the *Work Engagement*, *Job Demands*, *Job Resources* and *Social Support* statements.

3.3 Analysis

3.3.1 Overall model

A regression of the introduced variables *Job Demands, Job Resources, Co-worker Social Support, Supervisor Social Support* and *Personal Resources* along with a control variable for other problems at the job on *Work Engagement* shows the following notable results:

Opposite to the usual findings, higher Job Demands positively affect *Work Engagement* with an influence of 0.167. Even with this variable not being highly significant (p-value: 0.154) it might be an indicator of the special characteristics of the office working environment, where higher *Job Demands* are not of physical nature and mostly correlated with responsibilities and a higher position in the company, which in turn might drive
Work Engagement. Unfortunately, checking for related correlations of variables like remuneration, independence and education with demands does not lead to supportive findings for this theory (Appendix: Figure 2).

In line with the literature, *Job Resources* are highly significant and positively influence *Work Engagement* with a coefficient of 0.256. The two *Social Support* measures which were separated from the *Job Resources* category are both significant as well, with a positive effect of *Supervisor Social Support* (0.172) and an unexpected negative influence of the *Co-worker Social Support* variable on *Work Engagement* (-0.14) . The *Personal Resources* variable shows a high average score and small variation, but is insignificant (pvalue: 0.324) and therefor negligible.

Figure 1: Overall model

Splitting up the *Co-worker Social Support* variable into the *Companionship, Emotional, Information* and *Instrumental Dimension,* the negative coefficient of the previous regression can be analyzed. Whereas the unaffected variables stay mostly unchanged in their coefficients and significance, a pattern in the single dimensions of *Co-worker Social Support* can be found: While *Companionship* and *Informational Dimension* show a positive influence, the *Emotional* and *Instrumental* measures seem to affect *Work Engagement* negatively. Although the *Information*

variable is insignificant, this pattern might indicate that the dimensions of *Social Support* related to belongingness and interest (*Companionship* and *Information* dimensions) drive *Work Engagement*, whereas the dimensions indicating actual *Personal* or *Professional Support* (*Emotional* and *Instrumental* dimensions) have a negative influence. The same pattern can be found when comparing the results of regressions that separates between southern and northern as well as between younger and older age groups, although the significance of some variables drop due to the lower quantity of data (Appendix: Figure 4 and 5). The Companionship and Informational Dimension can be seen as the *Perceived Social Support* and the *Emotional* and *Instrumental Dimension* as *Received Co-worker Social Support*. A regression that includes variables for *Perceived* and *Received Co-worker Social Support* shows high significance of this variables with a positive effect for *Perceived Co-worker Social Support* (0.4) and a negative influence for *Received Co-worker Social Support* (-0.59) . Looking for the same pattern in the *Supervisor Social Support Dimensions* lead to no clear result due to insignificancies of two of the four single dimensions (Appendix: Figure 6 and 7). With an adjusted R square of 0.378, compared to 0.352 of the precious one, this model describes the sources of Work Engagement slightly better. Even with the suspected high correlations of the *Social Support* variables, multicollinearity was no concern in this regression as the variance inflation factors showed no abnormalities (Appendix: Figure 8).

Figure 3: Overall model with single dimensions Co-worker Social Support

Investigating structural effects on the overall *Social Support* variable, the amount of employees, the level of education and the age of the employee is found to be significant. While more employees lead to more Social Support, higher educated and older employees report a lower average *Work Engagement* level.

Figure 9: Influence of structural variables on *Social Support*

3.3.2 *Personal-* and *Professional Support* are highly correlated for the employee co-worker relationship (H1)

The correlation matrix reveals a consistent positive correlation of all *Social Support* measures with the engagement level. *Supervisor Social Support* being significantly higher correlated (0.47) with *Work Engagement* than *Co-worker Social Support*, which shares only a small positive trend with the engagement data. For the supervisor relationship the *Professional Support* measure showed a higher correlation and *Personal Support* shared a larger trend with the engagement data for the Co-worker case.

For both, the Co-worker and Supervisor relationship, *Personal Support* is positively correlated with *Professional Support* with correlation coefficients of 0.64 and 0.72. Besides conforming the **Hypothesis 1 (H1)**, this shows that the same high correlation of *Social* and *Professional Support* can be found for the Supervisor-employee relationship.

	engage~t	copers~p	coprofsp	sppers~p	spprofsp
engagement	1.0000				
copersonalsp	0.1056	1.0000			
coprofsp	0.0547	0.6435	1.0000		
sppersonalsp	0.4031	0.5570	0.2799	1.0000	
spprofsp	0.4737	0.3713	0.3561	0.7191	1.0000

Figure 10: Correlation matrix *Personal* and *Professional Support*

When further splitting up the *Social Support* measures in the four dimensions, it can be seen that the correlations are higher for the Supervisor relationship for all the dimensions. Furthermore, the *Informational Dimension* contributes the most to the total *Supervisor Social Support* correlation measure, while for the Co-worker relation the *Companionship Dimension* supplements the biggest part. The high correlation coefficients between the *Companionship/ Emotional* and *Informational/ Instrumental* dimensions for both sources of *Social Support* respectively, reflect the construct of adding the *Companionship and Emotional* dimensions to the *Personal Support* and *Informational and Instrumental* dimensions to the *Professional Support* variable.

	cocompan	coemo	coinfo	coinstru	spcompan	spemo	spinfo	spinstru
cocompan	1.0000							
coemo	0.8381	1.0000						
coinfo	0.6605	0.6654	1.0000					
coinstru	0.4791	0.5403	0.7704	1.0000				
spcompan	0.5172	0.4917	0.2972	0.1579	1.0000			
spemo	0.4774	0.5470	0.3321	0.2397	0.8186	1.0000		
spinfo	0.3108	0.3436	0.3340	0.2353	0.6490	0.7466	1.0000	
spinstru	0.3342	0.3428	0.3657	0.3272	0.5925	0.6004	0.7602	1.0000

Figure 11: Correlation matrix single dimensions *Social Support*

3.3.3 The ratio of *Professional* to *Personal Support* depends on the countries and corporate culture but is similar for the co-worker and the supervisor relationship in-between those (H2)

By dividing *Professional Support* by *Personal Support* levels for each relationship (with co-workers and supervisor) two new variables (ratioproftopersspsp and ratioproftopersco) are created that characterises the prevalent relationships. To investigate the similarities of the two relationships in an organisation, the data summarization of those variables are compared:

ratioproftopersspsp

	Percentiles	Smallest		
1%	.53125	.5238096		
5%	.7941176	.53125		
10%	.8888889	.6	Obs	125
25%	1	.7307692	Sum of Wgt.	125
50%	1.107143		Mean	1.209186
		Largest	Std. Dev.	.3719369
75%	1.354839	2.272727		
90%	1.6	2.363636	Variance	.1383371
95%	1.9375	2.615385	Skewness	1.725553
99%	2.615385	2.916667	Kurtosis	7.604047

ratioproftopersco

	Percentiles	Smallest		
1%	.6428571	.5333334		
5%	.7666667	.6428571		
10%	.8611111	.6666667	Obs	125
25%	.972973	.6764706	Sum of Wgt.	125
50%	1.060606		Mean	1.120733
		Largest	Std. Dev.	.2853501
75%	1.230769	1.846154		
90%	1.473684	2	Variance	.0814247
95%	1.541667	2.166667	Skewness	1.654244
99%	2.166667	2.466667	Kurtosis	7.744243

Figure 12: Summarization Professional to Personal Social Support ratios

The mean (1.2 and1.12) and standard deviation (0.37 and 0.29) of both variables are very similar and also the percentiles show a common trend.

Calculating the absolute average of these ratios a mean of 0.288 was found (Appendix: Figure 13). This indicates that the *Professional* to *Personal Support* ratios for each employee have comparable magnitudes for both relationships in-between companies.

To answer the question which factors affect how *Professional* and *Personal Support* compares to each other a regression of work country, firm country, amount of employees, industry and position on the ratio for the supervisor case (ratioproftopersspsp) was performed: The country of work, the country of origin of the firm and the position in the firm show a very significant influence on the ratio of *Professional* to *Personal Supervisor Support*. When comparing the mean of the ratio by country of work it can be found that Germany has one of the highest values with 1.26, followed by Portugal with 1.239. The USA and India have one of the lowest with 1.12 and 1.05. Analysing those means by position, Controlling Jobs are found to have the highest ratios with 1.39 while Sales and Human Resource positions show the lowest ratios with 1.09 and 1.18.

ratioproft~p	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
countrywork	-.0014405	.0008609	-1.67	0.097	-.0031449	.000264
firmcountry	.0012563	.0006405	1.96	0.052	-.0000119	.0025244
employees	-.0017556	.0117672	-0.15	0.882	-.0250538	.0215425
industry	.0025091	.0055818	0.45	0.654	-.0085424	.0135606
_cons	1.186354	.1019377	11.64	0.000	.9845243	1.388183

Figure 14: Structural variables on the Supervisor Professional to Personal Support ratio

To see if the corporate culture has an influence on the ratio of Professional to Personal Support a regression of variables that are correlated with the culture in a corporation on the *Professional/Personal Support* ratio was performed. For the employee co-worker relationship the amount of employees and the education are found significantly influence this ratio. A higher education positively effect this ratio, while the amount of employees has a negative influence (Appendix: Figure 15).

3.3.4 Personal Support from Supervisors that don´t match individual Power Distance Indexes, negatively influences Work Engagement (H3)

In order to investigate the influence of extreme levels of *Supervisor Personal Support* a dummy variable was created for the lower and upper twenty percentile data for *Supervisor Personal Support* and included in the regression. The lower twenty percentile shows with a coefficient of 2.9 a strong positive effect on Work Engagement, while the upper twenty percentile is insignificant.

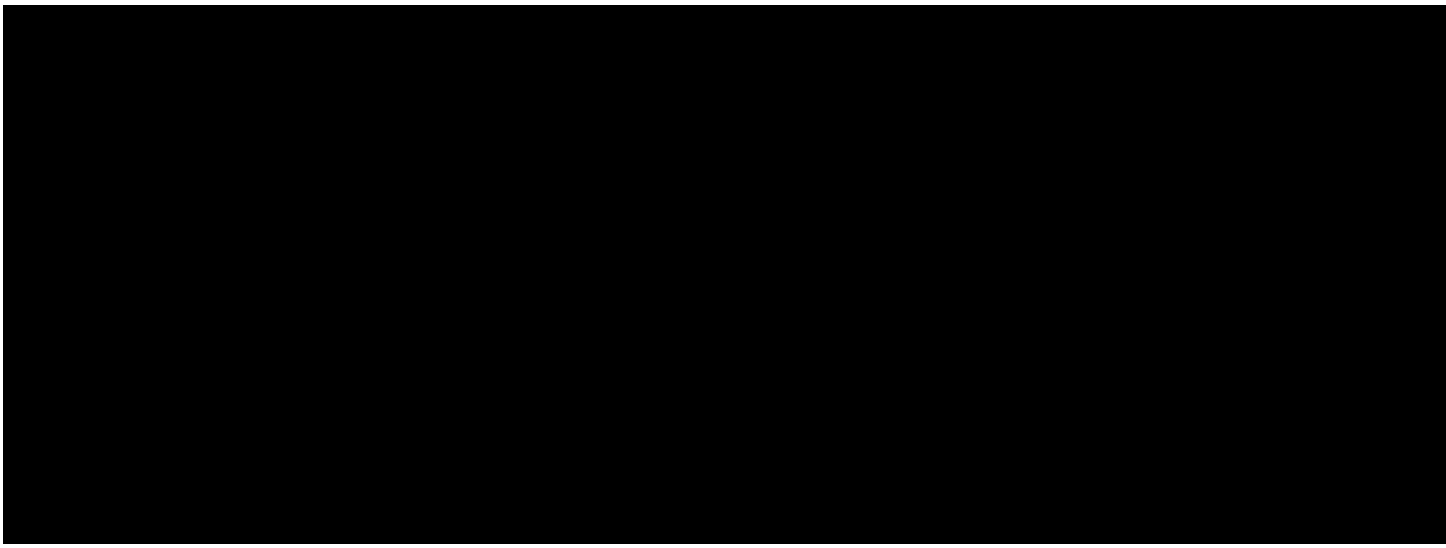

Figure 16: Upper and lower twenty percentile of *Supervisor Social Support* on *Work Engagement*

Even if this seems to be in contrast to the **H3**, the positive influence of the lower twenty percentile on *Work Engagement* might steam from the influence of the individual *PDI* on the balance of *Personal-* to *Profession Supervisor Social Support*, if the positive influence of low *Supervisor Personal Support* on *Work Engagement* is caused by employees with high *PDI*.
A comparison of the average *PDI* of the lower twenty percentile to the rest of the data shows a difference of 6.2 points.

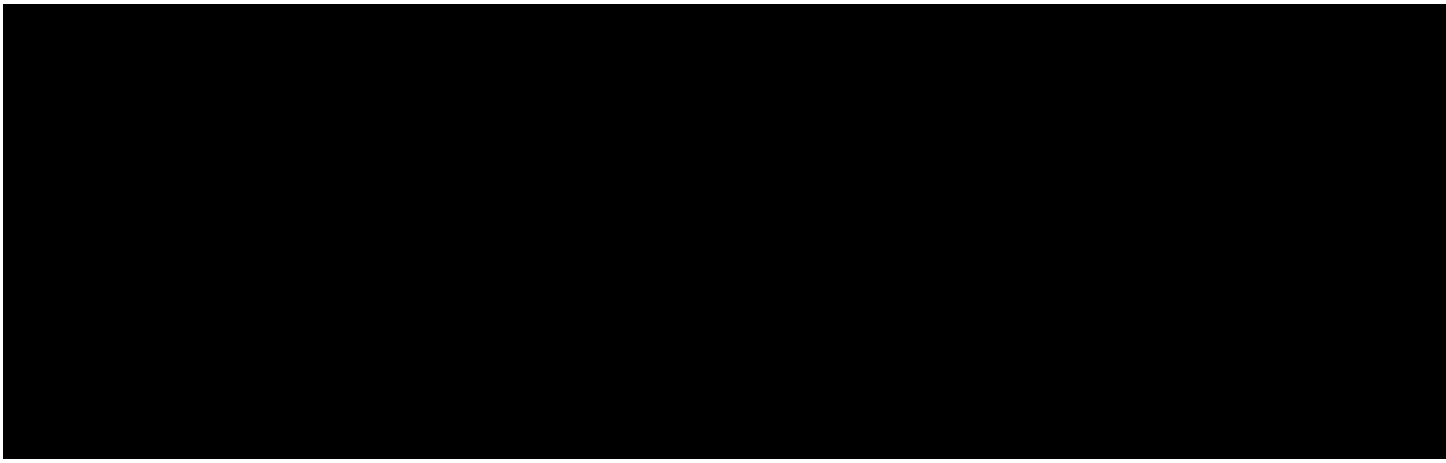

Figure 17: Summarization upper and lower twenty percentile *Supervisor Personal Support*

To correct for this influence, the absolute difference of the standardized *Supervisor Personal Support* and the standardized individual *PDI* is calculated. Low values of this new variable indicate a mismatch between *Supervisor Personal Support* level and the personal *Power Distance Index*, while higher values indicate a normal relationship since higher *PDI* cause weaker personal relationships with supervisors and vice versa. A regression of the standard model including a dummy variable for the lower twenty percentile of the new created variable shows a significant and strong negative effect of mismatches between *Supervisor Personal Support* and individual *Power Distance Indexes* on *Work Engagement*. This finding supports the **Hypothesis 3**, conforming extreme level of supervisor *Social Support* that don't match employees *PDI* to negatively effect *Work Engagement*.

Figure 18: Extreme difference *Supervisor Personal Support* and *IPDI* on *Work Engagement*

In order to check if the same effect can be found in differences between the *Supervisor Personal Support* and the national *Power Distance Indexes* of the birth country of the employee, the same procedure was followed using the national PDI. With a p-value of 0.826 the effect was found to be insignificant (Appendix: Figure 19). An issue that needs to be mentioned here is that Work Engagement individual PDI levels are found to be significantly different from the national PDI level of the respondent. This can be seen when analyzing the variable indicating the difference between those two Power Distance Indexes (Appendix: Figure 20).

3.3.5 Specific work environment attributes and good practices positively affect Social Support (H4)

To examine the impact of certain work environmental attributes like the existence of a canteen, a kitchen, an open workspace, a break out space and entertainment and of good practices (regular events, bonuses, team bonuses, individual goals, performance recognition, performance comparison, supervisor meetings and team meetings) the regression outcomes of dummy variables indicating the existence of the mentioned characteristics on overall *Social Support* levels are analyzed.

For the overall *Social Support* variable only the existence of a break out space, the recognition of performance and meetings with the supervisor as well as with the team are found to be significant. Regular team meetings have the strongest effect on *Social Support* with a coefficient of 14.73. The recognition of good performance and regular meetings with the supervisor both show a strong influence with a magnitude of around 11.7. The existence of a break out space for employees leads the average *Social Support* level to increase by 7.78 points.

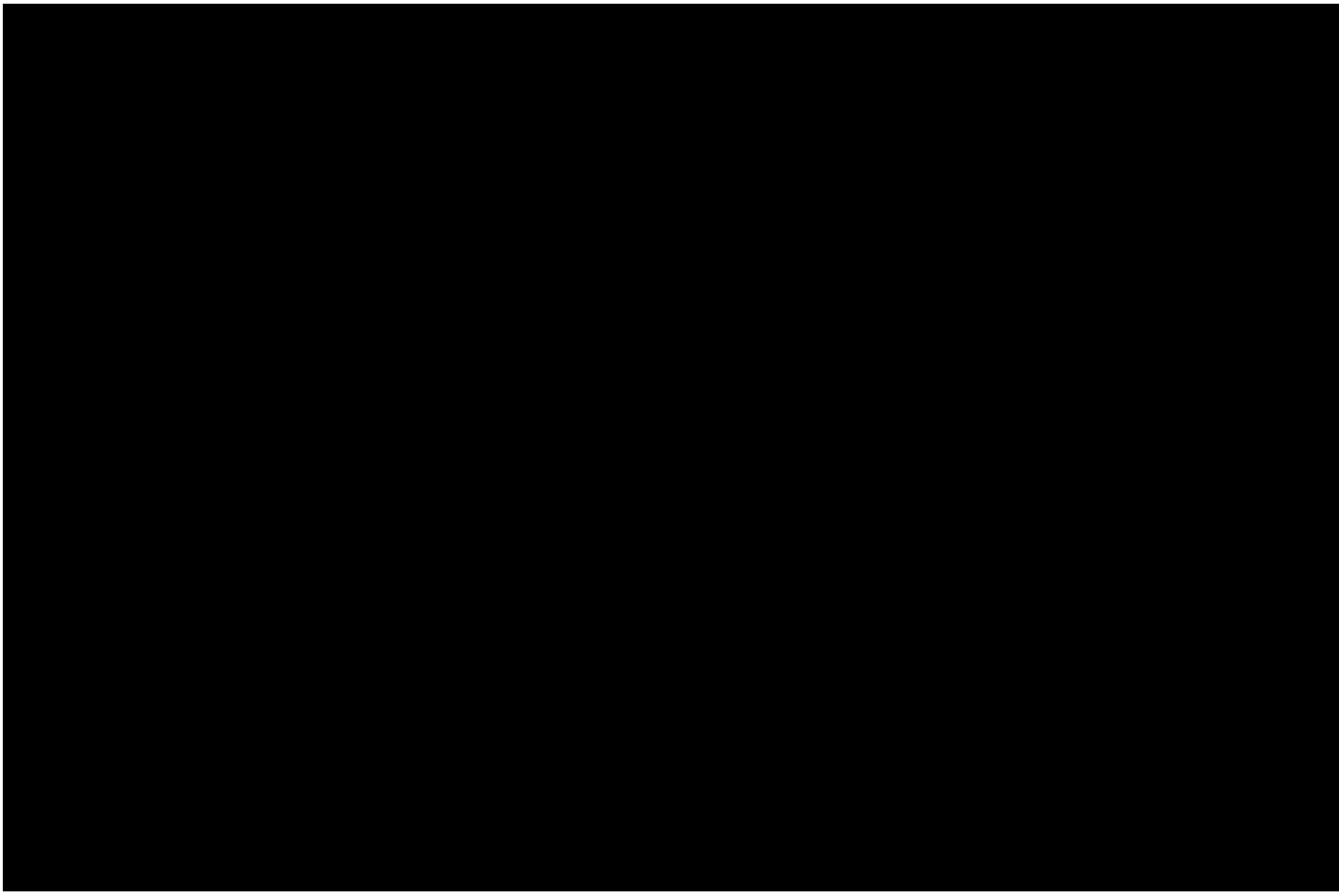

Figure 21: Work environment attributes and good practices on Social Support

When repeating this regression for the *Supervisor Social Support* case and adding additional variables indicating the sex of the employee, the sex of the supervisor and the difference in sex between the employee and supervisor, the same characteristics as in the previous regression are found to be significant. While the effect of regular team and supervisor meetings dropped to 6.4 and 6.7 for the *Supervisor Social Support*, the influence of the other variables remain mostly unchanged. Furthermore it can be found, that having a female supervisor leads to a higher *Supervisor Social Support* level of around 4.9 points, while female employees themselves reported a 4.5 points lower *Supervisor Social Support*.

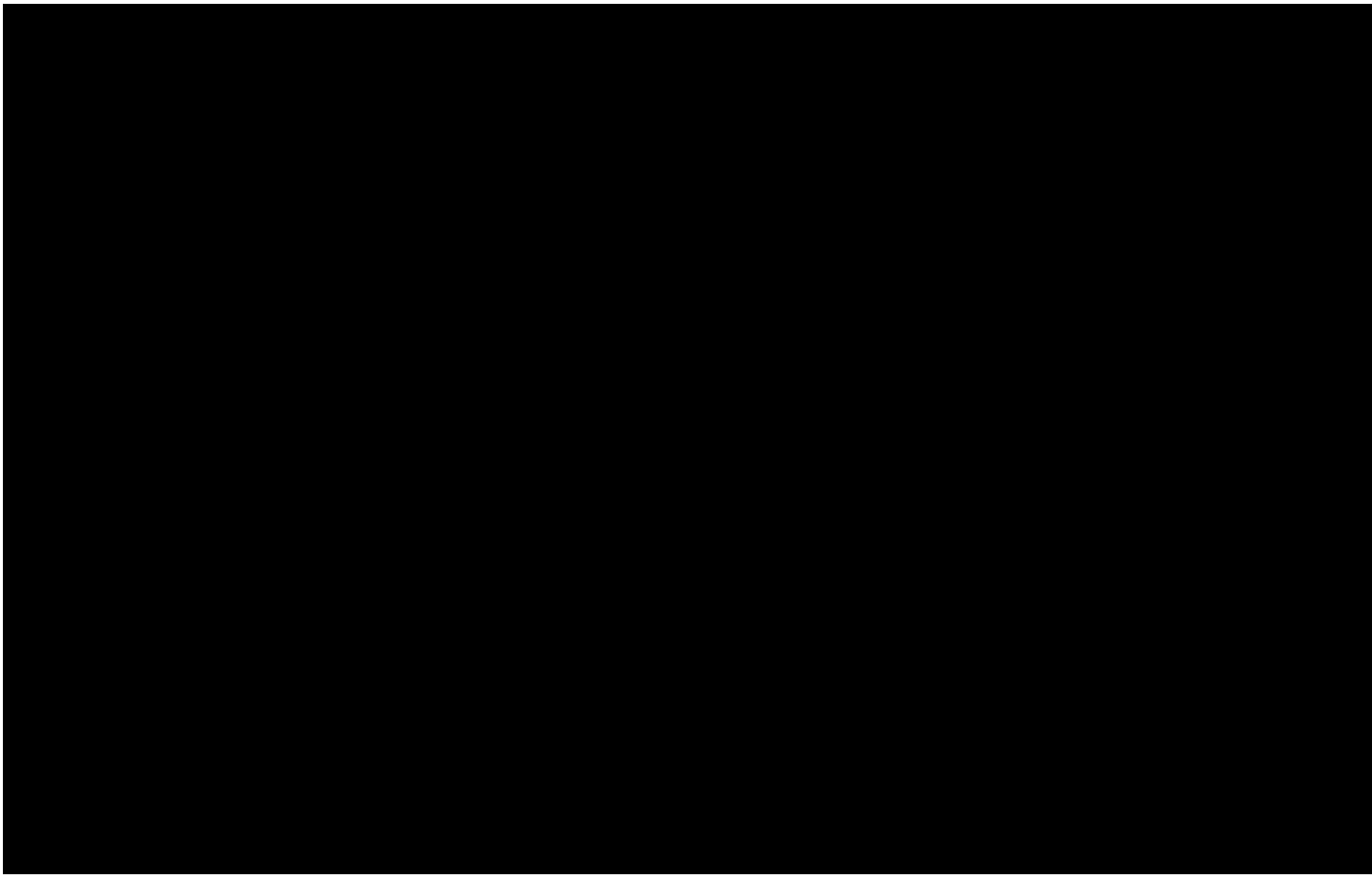

Figure 22: Work environment attributes, good practices and structural variables on Supervisor Social Support

CHAPTER VI: Discussion

4.1 Findings

Even with the main focus of this thesis being the determinants and factors of the *Social Support* measures and their influence on the *Work Engagement* concept, the first finding is the one in which context all the other findings need to be viewed: In an office environment the influence and significance of some of the variables related to the *Work Engagement* concept differ from the usual findings presented in the literature. Examining the known variables effecting *Work Engagement* in this specific job type showed the following specialties: First, higher *Job Demands* positive influence *Work Engagement*. Furthermore, the *Co-worker Social Support* dimensions that are related with actual *Personal* or *Professional Support* (*Emotional* and *Instrumental* dimension) rather than with Belonging and Interest (*Companionship* and *Information* dimension) negatively influence *Work Engagement* and lastly *Personal Resources* are insignificant for determining *Work Engagement*. These findings might be explained by the relationship between *Job Demands* and position, where higher *Job Demands* are correlated with more responsibilities and a higher status in the company, which in turn might lead to a higher *Work Engagement*. Although checking for correlations of *Job Demands* and measures that might indicate a higher position (independence and remuneration satisfaction) did not lead to significant findings supporting this relationship. Even if this does not mean this theory is wrong, other explanations for the positive influence of *Job Demands,* like a biased and too small sample are possible. The negative influence of *Co-worker Emotional* and *Instrumental Support* could be due to the desire to establish and keep a high level of proficiency and an image of expertise and emotional stability, in order to proceed in a competitive professional environment. This theory is supported by the positive influence of a variable summarizing the *Companionship* and *Information Dimension* to *Perceived Co-worker Social Support* and a negative influence of *Received Co-worker Social Support* (combining the *Emotional* and *Informational* dimension*)* in a regression on *Work Engagement*. The high average score and small variation for the *Personal Resources* variable, combined with the young and highly educated population, might have driven this effect. The small variance in the *Personal Resources* data might also be one reason for its insignificance in the *Work Engagement* regression.

Examining the structural effects of the data on the *Social Support* measure, the number of employees, education and the respondent's age significantly affect the overall *Social Support* level. More employees lead to higher average level of overall *Social Support*, while a higher level of education and the employee's age negatively affect overall *Social Support*.

Moving on to the Hypothesis of this thesis, a high correlation between the *Personal* and *Profession Support* could be found not only for the employee co-worker, but also for the employee supervisor relationship (**H1**).

The average ratio of *Professional*- to *Personal Support* is found to be higher than one for both relationships, showing that the *Professional Support* is generally higher than the *Personal Support* in offices. Besides observing country and industry differences for the *Profession/Personal Support* ratio with Germany and Portugal showing the highest ratios (1.26 and 1.24) and the USA and Ireland the lowest (1.05 and 1.10), similarities of the two ratios (for the co-worker and supervisor case) in between a company was found. This might indicate that a corporate culture, which depends on the firm's country of origin and the industry, is reflected in the *Professional/Personal Support* ratio and this culture also defines the employee co-worker relationship (**H2**).

Examining the possible negative effects of extreme levels of *Supervisor Personal Support*, a negative influence on *Work Engagement* was found for employees with mismatching individual *Power Distant Index* (**H3**). This indicates that too much *Supervisor Personal Support* is hurting *Work Engagement* for employees that have a high individual *PDI* and too less *Supervisor Personal Support* for those who reported a low individual *PDI*.

Furthermore an influence of common good practices and working environments on the *Social Support* measure was found (**H4**): The existence of a shared break out space, the recognition of good performance and regular meetings with the team as well as with the supervisor have been found to positively affect *Social Support*. Regular supervisor meetings had the biggest influence followed by performance recognition and regular team meetings. Focusing on the *Supervisor Social Support* variable, it can be seen that female supervisors in general provide a higher *Supervisor Social Support* of around 5 points, while female employees on average reported a slightly lower *Work Engagement*.

4.2 Implications, limitations and future research

The findings of this Thesis validate the positive influence of *Social Support* on *Work Engagement* in an office environment. Companies benefit from providing a supportive working environment and due to the high correlation of *Personal*- and *Professional Support*, investing in either one of those dimensions will most likely also benefit the other one. Hereby it is important to take into account, that for some employees, actual supportive actions might better originate from supervisors rather than from their peers. Additionally, leaders might be able to set a cultural norm for the prevalent relation of *Professional*- to *Personal Support*, since this ratio is found to be similar for the supervisor and co-worker relationship. To determine the optimal level of *Supervisor Personal Support*, the individual *Power Distance Index* has been found to have a significant influence: Too much *Supervisor Personal Support* for employees with high *PDI* and too less *Supervisor Personal Support* for employees with low *PDI* negatively affect *Work Engagement*, which highlights the need of managers to adjust their management styles to different types of individuals. Furthermore mangers can drive *Social Support* in offices by fostering a culture of feedback in regular team and one on one meetings. Recognize and praise good work is another tool for leaders to drive *Social Support* among their employees.

Even when the negative influence of the *Co-worker Social Support* dimensions related to actual emotional and professional help might be related to establish and keeping a professional and emotional strong image, the concrete influence and existence in other work environments as well as in populations with lower education needs further research. The homogeneous population of highly educated young employees and the low amount of observations might in general be a factor that led to an amplifying effect of some variables. Also the positive influence of *Job Demands* on *Work Engagement* in an office type environment need to be addressed in larger studies with a more heterogeneous population and may lead to the need to correct for the correlations of *Job Demands* and position, responsibilities and status in the company for specific work environments. While the firm country and country of work have been found to effect the *Professional* to *Personal Support* ratio their influence is only small, which means many important factors that shape the scope and relation of the *Personal* and *Professional* dimensions in work place relationships remain unknown. Lastly the differences between individual *PDI* and national *PDI* in the data is another question that is left unanswered.

Bibliography

Annamarie Mann and Ryan Darby (2014): Should managers focus on performance or engagement. In: *Gallup Business Journal* 1. Online verfügbar unter http://www.gallup.com/businessjournal, zuletzt geprüft am 20.02.2017.

Bakker, Arnold B. (2011): An Evidence-Based Model of Work Engagement. In: *Current Directions in Psychological Science* 20 (4), S. 265–269. DOI: 10.1177/0963721411414534.

Bakker, Arnold B.; Demerouti, Evangelia (2007): The Job Demands-Resources model. State of the art. In: *Journal of Managerial Psych* 22 (3), S. 309–328. DOI: 10.1108/02683940710733115.

Bakker, Arnold B.; Demerouti, Evangelia (2008): Towards a model of work engagement. In: *Career Dev Int* 13 (3), S. 209–223. DOI: 10.1108/13620430810870476.

Bakker, Arnold B.; Demerouti, Evangelia; Verbeke, Willem (2004): Using the job demands-resources model to predict burnout and performance. In: *Hum. Resour. Manage.* 43 (1), S. 83–104. DOI: 10.1002/hrm.20004.

Bakker, Arnold B.; Hakanen, Jari J.; Demerouti, Evangelia; Xanthopoulou, Despoina (2007): Job resources boost work engagement, particularly when job demands are high. In: *Journal of Educational Psychology* 99 (2), S. 274–284. DOI: 10.1037/0022-0663.99.2.274.

Bakker, Arnold B.; Leiter, Michael P. (Hg.) (2010): The conceptualization and measurement of work engagement. A handbook of essential theory and research. Hove: Psychology Press.

Bakker, Arnold B.; Schaufeli, Wilmar B. (2008): Positive organizational behavior. Engaged employees in flourishing organizations. In: *J. Organiz. Behav.* 29 (2), S. 147–154. DOI: 10.1002/job.515.

Bakker, Arnold B.; van Emmerik, Hetty; Euwema, Martin C. (2006): Crossover of Burnout and Engagement in Work Teams. In: *Work and Occupations* 33 (4), S. 464–489. DOI: 10.1177/0730888406291310.

Bakker, B.; Euwema, C. F.; van Dierendonck, A. (2003): Job resources foster engagement and motivation to change. In: *Manuscript in preparation*.

Barrera, Manuel; Sandler, Irwin N.; Ramsay, Thomas B. (1981): Preliminary development of a scale of social support: Studies on college students. In: *American Journal of Community Psychology* 9 (4), S. 435–447.

Baumeister, Roy F.; Leary, Mark R. (1995): The need to belong. Desire for interpersonal attachments as a fundamental human motivation. In: *Psychological Bulletin* 117 (3), S. 497–529. DOI: 10.1037/0033-2909.117.3.497.

Bersin & Associates (2012): Employee Engagement: Market Review, Buyer's Guide and Provider Profiles. Bersin & Associates.

Bialas, S. (2009): Power distance as a determinant of relations between managers and employees in the enterprises with foreign capital. In: *Journal of Intercultural Management* 1 (2), S. 105–115.

Blau, Peter M. (1964): Justice in Social Exchange. In: *Sociological Inquiry* 34 (2), S. 193–206. DOI: 10.1111/j.1475-682X.1964.tb00583.x.

Blechman, Elaine A.; Brownell, Kelly D. (1998): Behavioral medicine and women: A comprehensive handbook: Guilford Press.

Bond, M. H.; Smith, P. B. (1996): Cross-cultural social and organizational psychology. In: *Annual review of psychology* 47, S. 205–235. DOI: 10.1146/annurev.psych.47.1.205.

Britt, Thomas W.; Adler, Amy B.; Bartone, Paul T. (2001): Deriving benefits from stressful events. The role of engagement in meaningful work and hardiness. In: *Journal of occupational health psychology* 6 (1), S. 53–63. DOI: 10.1037/1076-8998.6.1.53.

Carmeli, Abraham; Brueller, Daphna; Dutton, Jane E. (2009): Learning behaviours in the workplace: The role of high-quality interpersonal relationships and psychological safety. In: *Systems Research and Behavioral Science* 26 (1), S. 81–98.

Christian, MichaelI S.; GARZA, ADELA S.; SLAUGHTER, JEREL E. (2011): Work Engagement. A quantitative review and test of its relations with task and contextual performance. In: *Personnel Psychology* 64 (1), S. 89–136. DOI: 10.1111/j.1744-6570.2010.01203.x.

Chronister, Julie A.; Johnson, Erica K.; Berven, Norman L. (2006): Measuring social support in rehabilitation. In: *Disability and Rehabilitation* 28 (2), S. 75–84.

Demerouti, Evangelia; Bakker, Arnold B.; Jonge, Jan de; Janssen, Peter P. M.; Schaufeli, Wilmar B. (2001): Burnout and engagement at work as a function of demands and control. In: *Scandinavian journal of work, environment & health*, S. 279–286.

Durán, Auxiliadora; Extremera, Natalio; Rey, Lourdes (2004): Engagement and Burnout: Analysing Their Association Patterns. In: *Psychological Reports* 94 (3), S. 1048–1050. DOI: 10.2466/pr0.94.3.1048-1050.

Edmondson, Amy C.; Kramer, Roderick M.; Cook, Karen S. (2004): Psychological safety, trust, and learning in organizations: A group-level lens. In: *Trust and distrust in organizations: Dilemmas and approaches* 12, S. 239–272.

Eisenberger, Robert; Cummings, Jim; Armeli, Stephen; Lynch, Patrick (1997): Perceived organizational support, discretionary treatment, and job satisfaction. In: *Journal of Applied Psychology* 82 (5), S. 812–820. DOI: 10.1037/0021-9010.82.5.812.

Eisenberger, Robert; Stinglhamber, Florence; Vandenberghe, Christian; Sucharski, Ivan L.; Rhoades, Linda (2002): Perceived supervisor support. Contributions to perceived organizational support and employee retention. In: *Journal of Applied Psychology* 87 (3), S. 565–573. DOI: 10.1037//0021-9010.87.3.565.

González-Romá, Vicente; Schaufeli, Wilmar B.; Bakker, Arnold B.; Lloret, Susana (2006): Burnout and work engagement. Independent factors or opposite poles? In: *Journal of Vocational Behavior* 68 (1), S. 165–174. DOI: 10.1016/j.jvb.2005.01.003.

Gorter, R. C.; te Brake, J. H.M.; Eijkman, M. A.J.; Hoogstraten, Joh (2006): Job resources in Dutch dental practice. In: *International Dental Journal* 56 (1), S. 22–28. DOI: 10.1111/j.1875-595X.2006.tb00070.x.

Green, Dianne E.; Walkey, Frank H.; Taylor, Antony J. W. (1991): The three-factor structure of the Maslach Burnout Inventory: A multicultural, multinational confirmatory study. In: *Journal of Social Behavior and Personality* 6 (3), S. 453.

Haines, Valerie.; HURLBERT, JEANNE S.; ZIMMER, CATHERINE (1991): Occupational Stress, Social Support, and the Buffer Hypothesis. In: *Work and Occupations* 18 (2), S. 212–235. DOI: 10.1177/0730888491018002005.

Hakanen, Jari J.; Bakker, Arnold B.; Schaufeli, Wilmar B. (2006): Burnout and work engagement among teachers. In: *Journal of School Psychology* 43 (6), S. 495–513. DOI: 10.1016/j.jsp.2005.11.001.

Hakanen, Jari J.; Schaufeli, Wilmar B.; Ahola, Kirsi (2008): The Job Demands-Resources model. A three-year cross-lagged study of burnout, depression, commitment, and work engagement. In: *Work & Stress* 22 (3), S. 224–241. DOI: 10.1080/02678370802379432.

Hallberg, Ulrika E.; Schaufeli, Wilmar B. (2006): "Same Same" But Different? In: *European Psychologist* 11 (2), S. 119–127. DOI: 10.1027/1016-9040.11.2.119.

Hofstede, Geert (1984): Cultural dimensions in management and planning. In: *Asia Pacific journal of management* 1 (2), S. 81–99.

Hu, Qiao; Schaufeli, Wilmar B.; Taris, Toon W. (2011): The Job Demands–Resources model. An analysis of additive and joint effects of demands and resources. In: *Journal of Vocational Behavior* 79 (1), S. 181–190. DOI: 10.1016/j.jvb.2010.12.009.

Jacob Morgan (2017): Why the Millions Work Engagement Spend on Employee Engagement Buy Us So Little. In: *Harvards Business Review*, 10.03.2017. Online verfügbar unter https://hbr.org/2017/03/why-the-millions-Work Engagement-spend-on-employee-engagement-buy-us-so-little, zuletzt geprüft am 13.03.2017.

Jerusalem, Matthias; Schwarzer, Ralf (1979): The general self-efficacy scale.

Johnson, J. V.; Hall, E. M. (1988): Job strain, work place social support, and cardiovascular disease. A cross-sectional study of a random sample of the Swedish working population. In: *Am J Public Health* 78 (10), S. 1336–1342. DOI: 10.2105/AJPH.78.10.1336.

Kahn, W. A. (1990): PSYCHOLOGICAL CONDITIONS OF PERSONAL ENGAGEMENT AND DISENGAGEMENT AT WORK. In: *Academy of Management Journal* 33 (4), S. 692–724. DOI: 10.2307/256287.

Kahn, William A. (1992): To Be Fully There: Psychological Presence at Work. In: *Human Relations* 45 (4), S. 321–349. DOI: 10.1177/001872679204500402.

Kark, Ronit; Carmeli, Abraham (2009): Alive and creating: The mediating role of vitality and aliveness in the relationship between psychological safety and creative work involvement. In: *Journal of Organizational Behavior* 30 (6), S. 785–804.

Kaufmann, Gary M.; Beehr, Terry A. (1986): Interactions between job stressors and social support. Some counterintuitive results. In: *Journal of Applied Psychology* 71 (3), S. 522–526. DOI: 10.1037/0021-9010.71.3.522.

Kawachi, Ichiro; Berkman, Lisa F. (2001): Social ties and mental health. In: *Journal of Urban health* 78 (3), S. 458–467.

KENEXA® HIGH PERFORMANCE INSTITUTE WORKTRENDS™ (2011): Engagement Levels in Global Decline: Organizations Losing a Competitive Advantage.

Kram, Kathy E.; Isabella, Lynn A. (1985): Mentoring alternatives: The role of peer relationships in career development. In: *Academy of Management Journal* 28 (1), S. 110–132.

Lange, Annet H. de; Witte, Hans de; Notelaers, Guy (2008): Should I stay or should I go? Examining longitudinal relations among job resources and work engagement for stayers versus movers. In: *Work & Stress* 22 (3), S. 201–223. DOI: 10.1080/02678370802390132.

Langford, Catherine Penny Hinson; Bowsher, Juanita; Maloney, Joseph P.; Lillis, Patricia P. (1997): Social support. A conceptual analysis. In: *Journal of Advanced Nursing* 25 (1), S. 95–100. DOI: 10.1046/j.1365-2648.1997.1997025095.x.

Lindström, K.; Hottinen, V.; Bredenberg, K. (2000): Työilmapiiri-ja hyvinvointibarometri [The healthy organization barometer]. In: *Helsinki: Finnish Institute of Occupational Health*.

Luthans, Fred; Church, Allan H. (2002): Positive organizational behavior. Developing and managing psychological strengths. In: *Academy of Management Executive* 16 (1), S. 57–72. DOI: 10.5465/AME.2002.6640181.

Macey, William H. (Hg.) (2009): Employee engagement. Tools for analysis, practice, and competitive advantage. Malden, MA, Chichester: Wiley; Wiley-Blackwell (Talent management essentials).

Maslach, C.; Jackson, S. E. (1982): Burnout: The cost of caring. 1982. In: *Englewood Cliffs, NJ, PrenticeHall*.

Maslach, Christina; Leiter, Michael P. (dr. 2014): The truth about burnout. How organizations cause personal stress and what to do about it. San Francisco: Jossey-Bass, A Wiley Imprint.

Mead, Richard (2005): International management. Cross-cultural dimensions. 3. ed. Malden Mass. u.a.: Blackwell Publ.

Montgomery, A. J.; Peeters, M. C. W.; Schaufeli, W. B.; Ouden, M. Den (2003): Work-home interference among newspaper managers. Its relationship with burnout and engagement. In: *Anxiety, Stress & Coping* 16 (2), S. 195–211. DOI: 10.1080/10615806.2003.10382973.

Morrison, Rachel L.; Nolan, Terry (2007): Too Much of a Good Thing?: Difficulties with Workplace Friendships. In: *University of Auckland Business Review* 9 (2), S. 32.

Myers, David G. (2000): The funds, friends, and faith of happy people. In: *American Psychologist* 55 (1), S. 56–67. DOI: 10.1037/0003-066X.55.1.56.

Nunnally, Jum C.; Bernstein, Ira H. (1994): Psychometric theory. 3. ed., 2. [print.]. New York NY u.a.: McGraw-Hill [u.a.] (McGraw-Hill series in psychology).

Rhoades, Linda; Eisenberger, Robert (2002): Perceived organizational support. A review of the literature. In: *Journal of Applied Psychology* 87 (4), S. 698–714. DOI: 10.1037//0021-9010.87.4.698.

Rodriguez, Mario S.; Cohen, Sheldon (1998): Social support. In: *Encyclopedia of mental health* 3, S. 535–544.

Sadler, P. J.; Hofstede, G. H. (2016): Leadership Styles. Preferences and Perceptions of Employees of an International Company in Different Countries. In: *International Studies of Management & Organization* 6 (3), S. 87–113. DOI: 10.1080/00208825.1976.11656207.

Saks, Alan M. (2006): Antecedents and consequences of employee engagement. In: *Journal of Managerial Psych* 21 (7), S. 600–619. DOI: 10.1108/02683940610690169.

Salanova, Marisa; Agut, Sonia; Peiro, Jose Maria (2005): Linking organizational resources and work engagement to employee performance and customer loyalty: the mediation of service climate. In: *The Journal of applied psychology* 90 (6), S. 1217–1227. DOI: 10.1037/0021-9010.90.6.1217.

Sarason, Barbara R.; Sarason, Irwin G.; Pierce, Gregory R. (1990): Social support: An interactional view: John Wiley & Sons.

Schaubroeck, John; Jones, James R.; Xie, Jia Lin (2001): Individual differences in utilizing control to cope with job demands. Effects on susceptibility to infectious disease. In: *Journal of Applied Psychology* 86 (2), S. 265–278. DOI: 10.1037//0021-9010.86.2.265.

Schaufeli, Wilmar B.; Bakker, Arnold B. (2004): Job demands, job resources, and their relationship with burnout and engagement. A multi-sample study. In: *J. Organiz. Behav.* 25 (3), S. 293–315. DOI: 10.1002/job.248.

Schaufeli, Wilmar B.; Bakker, Arnold B.; Salanova, Marisa (2006): The Measurement of Work Engagement With a Short Questionnaire. In: *Educational and Psychological Measurement* 66 (4), S. 701–716. DOI: 10.1177/0013164405282471.

Schaufeli, Wilmar B.; Bakker, Arnold B.; van Rhenen, Willem (2009): How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. In: *J. Organiz. Behav.* 30 (7), S. 893–917. DOI: 10.1002/job.595.

Schaufeli, Wilmar B.; Martínez, Isabel M.; Pinto, Alexandra Marques; Salanova, Marisa; Bakker, Arnold B. (2002a): Burnout and Engagement in University Students. In: *Journal of Cross-Cultural Psychology* 33 (5), S. 464–481. DOI: 10.1177/0022022102033005003.

Schaufeli, Wilmar B.; Salanova, Marisa; González-Romá, Vicente; Bakker, Arnold B. (2002b): The Measurement of Engagement and Burnout: A Two Sample Confirmatory Factor Analytic Approach. In: *Journal of Happiness Studies* 3 (1), S. 71–92. DOI: 10.1023/A:1015630930326.

Schaufeli, Wilmar B.; Taris, Toon W.; van Rhenen, Willem (2008): Workaholism, Burnout, and Work Engagement. Three of a Kind or Three Different Kinds of Employee Well-being? In: *Applied Psychology* 57 (2), S. 173–203. DOI: 10.1111/j.1464-0597.2007.00285.x.

Sherbourne, Cathy Donald; Stewart, Anita L. (1991): The MOS social support survey. In: *Social science & medicine* 32 (6), S. 705–714.

Sherony, Kathryn M.; Green, Stephen G. (2002): Coworker exchange. Relationships between coworkers, leader-member exchange, and work attitudes. In: *Journal of Applied Psychology* 87 (3), S. 542–548. DOI: 10.1037/0021-9010.87.3.542.

Sverke, Magnus; Witte, Hans de; Näswall, Katharina; Hellgren, Johnny; Vander Elst, Tinne; Baillien, Elfi; Cuyper, Nele de (2010): The role of organizational communication and

participation in reducing job insecurity and its negative association with work-related well-being. In: *Economic and Industrial Democracy* 31 (2), S. 249–264. DOI: 10.1177/0143831X09358372.

Taylor, Shelley E. (2011): Social support: A review. In: *The handbook of health psychology* 189, S. 214.

Tsai, Wenpin (2002): Social structure of "coopetition" within a multiunit organization: Coordination, competition, and intraorganizational knowledge sharing. In: *Organization science* 13 (2), S. 179–190.

Uchino, Bert N. (2004): Social support and physical health: Understanding the health consequences of relationships: Yale University Press.

van den Broeck, Anja; Vansteenkiste, Maarten; Witte, Hans de; Lens, Willy (2008): Explaining the relationships between job characteristics, burnout, and engagement. The role of basic psychological need satisfaction. In: *Work & Stress* 22 (3), S. 277–294. DOI: 10.1080/02678370802393672.

van der Heijden, B. I. J. M.; Kummerling, A.; van Dam, K.; van der Schoot, E.; Estryn-Behar, M.; Hasselhorn, H. M. (2010): The impact of social support upon intention to leave among female nurses in Europe: secondary analysis of data from the NEXT survey. In: *International journal of nursing studies* 47 (4), S. 434–445. DOI: 10.1016/j.ijnurstu.2009.10.004.

van Veldhoven, M.; Meijman, Theo (1994): Het meten van psychosociale arbeidsbelasting met een vragenlijst: de vragenlijst beleving en beoordeling van de arbeid (VBBA): Nederlands Instituut voor Arbeidsomstandigheden (NIA).

Victor Lipman (2013): Why Are So Many Employees Disengaged? In: *Forbes*, 18.01.2013. Online verfügbar unter https://www.forbes.com/sites/victorlipman/2013/01/18/why-are-so-many-employees-disengaged/#4519bd231e22, zuletzt geprüft am 11.03.2017.

Walton, Gregory M.; Cohen, Geoffrey L. (2011): A brief social-belonging intervention improves academic and health outcomes of minority students. In: *Science* 331 (6023), S. 1447–1451.

WAYNE, S. J.; SHORE, L. M.; LIDEN, R. C. (1997): Perceived organisational support and leader-member exchange. A social exchange perspective. In: *Academy of Management Journal* 40 (1), S. 82–111. DOI: 10.2307/257021.

Wills, Thomas Ashby (1991): Social support and interpersonal relationships.

Wilmar Schaufeli & Arnold Bakker (2003): UWES Manual.

Xanthopoulou, Despoina; Bakker, Arnold B.; Demerouti, Evangelia; Schaufeli, Wilmar B. (2009): Work engagement and financial returns. A diary study on the role of job and personal resources. In: *Journal of Occupational and Organizational Psychology* 82 (1), S. 183–200. DOI: 10.1348/096317908X285633.

Xanthopoulou, Despoina; Bakker, Arnold B.; Heuven, Ellen; Demerouti, Evangelia; Schaufeli, Wilmar B. (2008): Working in the sky: a diary study on work engagement among flight attendants. In: *Journal of occupational health psychology* 13 (4), S. 345–356. DOI: 10.1037/1076-8998.13.4.345.

Appendix

Figures

Source	SS	df	MS		
Model	3489.30764	6	581.551273	Number of obs =	125
Residual	5618.02036	118	47.6103421	F(6, 118) =	12.21
				Prob > F =	0.0000
Total	9107.328	124	73.4461935	R-squared =	0.3831
				Adj R-squared =	0.3518
				Root MSE =	6.9

engagement	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
demands	.1667475	.1161885	1.44	0.154	-.0633373	.3968324
resources	.2553827	.0665228	3.84	0.000	.1236494	.387116
problems	-.7018461	.2335733	-3.00	0.003	-1.164385	-.2393073
cosp	-.1399296	.0567951	-2.46	0.015	-.2523993	-.0274598
spsp	.1723199	.0541604	3.18	0.002	.0650675	.2795723
personalre	-.1045987	.105575	-0.99	0.324	-.3136658	.1044685
_cons	32.97271	5.882345	5.61	0.000	21.32406	44.62136

Figure 1: Overall Model

	demands	renume~n	indepe~e	educat~n
demands	1.0000			
renumeration	-0.0284	1.0000		
independence	-0.1600	0.2071	1.0000	
education	-0.1278	0.0069	0.2516	1.0000

Figure 2: Correlation demands with attributes indicating position

Source	SS	df	MS	Number of obs =	125
				F(9, 115) =	9.37
Model	3853.07056	9	428.118951	Prob > F =	0.0000
Residual	5254.25744	115	45.6891952	R-squared =	0.4231
				Adj R-squared =	0.3779
Total	9107.328	124	73.4461935	Root MSE =	6.7594

engagement	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
demands	.1586881	.1148597	1.38	0.170	-.0688268	.3862031
resources	.2684785	.066622	4.03	0.000	.1365131	.400444
problems	-.7297744	.2313519	-3.15	0.002	-1.188038	-.2715109
cocompan	.5570523	.3371882	1.65	0.101	-.1108526	1.224957
coemo	-.6778289	.2779588	-2.44	0.016	-1.228412	-.127246
coinfo	.237982	.3743292	0.64	0.526	-.5034922	.9794561
coinstru	-.4896329	.2585538	-1.89	0.061	-1.001778	.0225124
spsp	.1596587	.0554081	2.88	0.005	.0499059	.2694115
personalre	-.1105139	.1064769	-1.04	0.301	-.3214242	.1003963
_cons	29.63469	5.957665	4.97	0.000	17.8337	41.43568

Figure 3: Overall model with single dimensions *Co-worker Social Support*

-> countrygroupsouth = 0

Source	SS	df	MS		
Model	1631.19871	9	181.244301	Number of obs	= 76
Residual	2695.15656	66	40.8357054	F(9, 66)	= 4.44
				Prob > F	= 0.0001
Total	4326.35526	75	57.6847368	R-squared	= 0.3770
				Adj R-squared	= 0.2921
				Root MSE	= 6.3903

engagement	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
demands	.1803627	.1415121	1.27	0.207	-.1021754	.4629008
resources	.2317522	.0779297	2.97	0.004	.0761606	.3873439
problems	-.5756149	.2672691	-2.15	0.035	-1.109235	-.041995
cocompan	.4674783	.3641751	1.28	0.204	-.2596207	1.194577
coemo	-.7867366	.3135539	-2.51	0.015	-1.412767	-.160706
coinfo	.7176593	.4278747	1.68	0.098	-.1366201	1.571939
coinstru	-.7550095	.3070428	-2.46	0.017	-1.36804	-.1419788
spsp	.0598648	.0690173	0.87	0.389	-.0779326	.1976622
personalre	-.1508299	.1134255	-1.33	0.188	-.3772912	.0756314
_cons	35.80678	7.052913	5.08	0.000	21.72519	49.88838

-> countrygroupsouth = 1

Source	SS	df	MS		
Model	3073.67822	9	341.519802	Number of obs	= 49
Residual	1698.24015	39	43.5446192	F(9, 39)	= 7.84
				Prob > F	= 0.0000
Total	4771.91837	48	99.414966	R-squared	= 0.6441
				Adj R-squared	= 0.5620
				Root MSE	= 6.5988

engagement	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
demands	.1021472	.2003257	0.51	0.613	-.3030499	.5073442
resources	.2607124	.1164386	2.24	0.031	.0251932	.4962316
problems	-.8785461	.4735606	-1.86	0.071	-1.836413	.0793207
cocompan	.606378	.8030587	0.76	0.455	-1.017962	2.230717
coemo	-.1853926	.6197687	-0.30	0.766	-1.438993	1.068208
coinfo	-.756222	.7275937	-1.04	0.305	-2.227919	.7154752
coinstru	-.0998573	.4645266	-0.21	0.831	-1.039451	.8397366
spsp	.2923493	.0868918	3.36	0.002	.1165941	.4681045
personalre	.0275947	.3026612	0.09	0.928	-.5845953	.6397847
_cons	24.76958	11.00711	2.25	0.030	2.505601	47.03356

Figure 4: Co-worker Social Support dimensions by southern country

-> agegroupyoung = 0

Source	SS	df	MS		
Model	1678.52845	9	186.503161	Number of obs =	41
Residual	1389.03253	31	44.8075008	F(9, 31) =	4.16
				Prob > F =	0.0014
Total	3067.56098	40	76.6890244	R-squared =	0.5472
				Adj R-squared =	0.4157
				Root MSE =	6.6938

engagement	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
demands	.3615603	.2499968	1.45	0.158	-.1483115	.8714321
resources	.278867	.1317564	2.12	0.042	.010148	.5475861
problems	-1.159605	.4906543	-2.36	0.025	-2.160301	-.1589094
cocompan	-.4875468	.5503823	-0.89	0.383	-1.610059	.6349652
coemo	-.7906951	.5641321	-1.40	0.171	-1.94125	.3598599
coinfo	.9125704	.7372146	1.24	0.225	-.5909886	2.416129
coinstru	-.2558985	.4576203	-0.56	0.580	-1.189221	.6774241
spsp	.1174485	.1148762	1.02	0.315	-.1168431	.3517402
personalre	-.2748306	.1423638	-1.93	0.063	-.5651835	.0155224
_cons	35.19145	10.11419	3.48	0.002	14.56343	55.81947

-> agegroupyoung = 1

Source	SS	df	MS		
Model	2556.47221	9	284.052468	Number of obs =	84
Residual	3270.42065	74	44.1948736	F(9, 74) =	6.43
				Prob > F =	0.0000
Total	5826.89286	83	70.2035284	R-squared =	0.4387
				Adj R-squared =	0.3705
				Root MSE =	6.6479

engagement	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
demands	.0942617	.1426057	0.66	0.511	-.1898863	.3784097
resources	.2689849	.0834226	3.22	0.002	.1027617	.4352082
problems	-.7127255	.2740296	-2.60	0.011	-1.258741	-.1667096
cocompan	.8300669	.4507223	1.84	0.070	-.068017	1.728151
coemo	-.7324555	.3439071	-2.13	0.037	-1.417705	-.0472056
coinfo	.0056184	.4465636	0.01	0.990	-.8841791	.8954159
coinstru	-.2970688	.3303035	-0.90	0.371	-.9552128	.3610752
spsp	.1795146	.0655113	2.74	0.008	.0489806	.3100486
personalre	.1936834	.2286627	0.85	0.400	-.2619369	.6493038
_cons	20.21966	8.384563	2.41	0.018	3.513053	36.92627

Figure 5: Co-worker Social Support dimensions by age

Source	SS	df	MS	Number of obs =	125
				F(9, 115) =	7.99
Model	3504.01557	9	389.335063	Prob > F =	0.0000
Residual	5603.31243	115	48.7244559	R-squared =	0.3847
				Adj R-squared =	0.3366
Total	9107.328	124	73.4461935	Root MSE =	6.9803

engagement	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
demands	.1556758	.1205028	1.29	0.199	-.0830169	.3943686
resources	.2497812	.0710848	3.51	0.001	.1089759	.3905865
problems	-.6872414	.2387494	-2.88	0.005	-1.160158	-.2143248
cosp	-.1337446	.0596995	-2.24	0.027	-.2519978	-.0154914
spcompan	.2572319	.2511669	1.02	0.308	-.2402814	.7547451
spemo	.0468908	.2894503	0.16	0.872	-.5264546	.6202362
spinfo	.298796	.3007429	0.99	0.323	-.2969177	.8945097
spinstru	.1020002	.2137573	0.48	0.634	-.3214119	.5254124
personalre	-.1046666	.1108034	-0.94	0.347	-.3241469	.1148136
_cons	32.74961	6.016427	5.44	0.000	20.83223	44.667

Figure 6: Overall model with single dimensions for *Supervisor Social Support*

Source	SS	df	MS	Number of obs =	125
				F(8, 116) =	10.56
Model	3838.36749	8	479.795936	Prob > F =	0.0000
Residual	5268.96051	116	45.4220734	R-squared =	0.4215
				Adj R-squared =	0.3816
Total	9107.328	124	73.4461935	Root MSE =	6.7396

engagement	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
demands	.1532018	.1145467	1.34	0.184	-.0736725	.380076
resources	.2682404	.065187	4.11	0.000	.1391294	.3973514
problems	-.7222336	.2291865	-3.15	0.002	-1.176166	-.2683009
coperceivedsp	.4076667	.207658	1.96	0.052	-.0036261	.8189596
coreceivedsp	-.5948165	.1772602	-3.36	0.001	-.9459026	-.2437303
spperceivedsp	.1333416	.1814779	0.73	0.464	-.2260982	.4927814
spreceivedsp	.1831523	.1737457	1.05	0.294	-.160973	.5272776
personalre	-.1244003	.1040368	-1.20	0.234	-.3304583	.0816578
_cons	30.19633	5.844491	5.17	0.000	18.62058	41.77209

Figure 7: Perceived and Received Social Support on Work Engagement

Variable	VIF	1/VIF
coemo	3.86	0.258920
cocompan	3.79	0.263956
coinfo	3.75	0.266753
coinstru	2.60	0.384570
spsp	2.13	0.469677
resources	1.88	0.532902
problems	1.15	0.866055
personalre	1.14	0.875144
demands	1.14	0.876218
Mean VIF	2.38	

Figure 8: Variance inflation factor with single dimensions Co-worker Social Support

Source	SS	df	MS
Model	12155.4967	11	1105.04515
Residual	63254.6953	113	559.776065
Total	75410.192	124	608.14671

Number of obs	= 125
F(11, 113)	= 1.97
Prob > F	= 0.0374
R-squared	= 0.1612
Adj R-squared	= 0.0795
Root MSE	= 23.66

socialsupp~t	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
position	-.2698819	.9403399	-0.29	0.775	-2.132865	1.593101
industry	.3411146	.395524	0.86	0.390	-.4424898	1.124719
employees	1.473263	.8344932	1.77	0.080	-.1800188	3.126544
education	-3.015893	1.90945	-1.58	0.117	-6.798857	.7670705
spsex	7.165437	4.706287	1.52	0.131	-2.158567	16.48944
sex	-3.908021	4.697043	-0.83	0.407	-13.21371	5.397669
sexdif	.8553536	4.707986	0.18	0.856	-8.472016	10.18272
age	-5.368369	2.078613	-2.58	0.011	-9.486475	-1.250262
firmcountry	.0485723	.0450394	1.08	0.283	-.040659	.1378035
countrywork	.0342727	.0584881	0.59	0.559	-.0816028	.1501482
personalre	.7890629	.4836338	1.63	0.106	-.1691029	1.747229
_cons	104.8993	12.99394	8.07	0.000	79.15594	130.6426

Figure 9: Influence of structural variables on *Social Support*

ratioproftopersspsp

Percentiles		Smallest		
1%	.53125	.5238096		
5%	.7941176	.53125		
10%	.8888889	.6	Obs	125
25%	1	.7307692	Sum of Wgt.	125
50%	1.107143		Mean	1.209186
		Largest	Std. Dev.	.3719369
75%	1.354839	2.272727		
90%	1.6	2.363636	Variance	.1383371
95%	1.9375	2.615385	Skewness	1.725553
99%	2.615385	2.916667	Kurtosis	7.604047

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Percentiles		Smallest		
1%	.6428571	.5333334		
5%	.7666667	.6428571		
10%	.8611111	.6666667	Obs	125
25%	.972973	.6764706	Sum of Wgt.	125
50%	1.060606		Mean	1.120733
		Largest	Std. Dev.	.2853501
75%	1.230769	1.846154		
90%	1.473684	2	Variance	.0814247
95%	1.541667	2.166667	Skewness	1.654244
99%	2.166667	2.466667	Kurtosis	7.744243

Figure 12: Summarization of *Professional* to *Personal Support* ratios

ratiodif

Percentiles		Smallest		
1%	0	0		
5%	.0014814	0		
10%	.0142857	0	Obs	125
25%	.0526316	0	Sum of Wgt.	125
50%	.1428572		Mean	.2464462
		Largest	Std. Dev.	.2884563
75%	.3522167	.9904763		
90%	.5980393	1.128342	Variance	.083207
95%	.8181819	1.543956	Skewness	2.241959
99%	1.543956	1.583333	Kurtosis	9.189678

Figure 13: Differences of *Professional* to *Personal Support* ratios

Source	SS	df	MS	Number of obs =	125
				F(4, 120) =	1.23
Model	.673730127	4	.168432532	Prob > F =	0.3033
Residual	16.4800691	120	.137333909	R-squared =	0.0393
				Adj R-squared =	0.0073
Total	17.1537992	124	.138337091	Root MSE =	.37059

ratioproft~p	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
countrywork	-.0014405	.0008609	-1.67	0.097	-.0031449	.000264
firmcountry	.0012563	.0006405	1.96	0.052	-.0000119	.0025244
employees	-.0017556	.0117672	-0.15	0.882	-.0250538	.0215425
industry	.0025091	.0055818	0.45	0.654	-.0085424	.0135606
_cons	1.186354	.1019377	11.64	0.000	.9845243	1.388183

Figure 14: Structural variables on the Supervisor Professional/Personal Support ratio

Source	SS	df	MS	Number of obs =	125
				F(5, 119) =	6.28
Model	2.10691512	5	.421383023	Prob > F =	0.0000
Residual	7.98974744	119	.067140735	R-squared =	0.2087
				Adj R-squared =	0.1754
Total	10.0966626	124	.081424698	Root MSE =	.25912

ratioproft~o	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
education	.0753839	.0178754	4.22	0.000	.0399887	.110779
employees	-.0406651	.0082483	-4.93	0.000	-.0569976	-.0243327
industry	-.0037679	.0042575	-0.89	0.378	-.0121982	.0046624
position	.0074014	.0096201	0.77	0.443	-.0116474	.0264501
age	.0162686	.0215227	0.76	0.451	-.0263484	.0588857
_cons	.9509824	.089333	10.65	0.000	.7740942	1.127871

Figure 15: Structural variables on the Co-worker Professional/Personal Support ratio

Source	SS	df	MS	Number of obs =	125
Model	3522.23837	7	503.17691	F(7, 117) =	10.54
Residual	5585.08963	117	47.7358088	Prob > F =	0.0000
				R-squared =	0.3867
Total	9107.328	124	73.4461935	Adj R-squared =	0.3501
				Root MSE =	6.9091

engagement	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
demands	.1664639	.1161582	1.43	0.155	-.0635813	.3965092
resources	.2384292	.0666291	3.58	0.001	.1064738	.3703845
problems	-.7129662	.2341441	-3.04	0.003	-1.176676	-.249256
cosp	-.153697	.0565652	-2.72	0.008	-.2657215	-.0416726
spsp	.2414135	.0793227	3.04	0.003	.084319	.3985079
tpercentsper	2.89722	2.259701	1.28	0.202	-1.577999	7.37244
eipercentsper	-.29128	1.976739	-0.15	0.883	-4.206108	3.623548
_cons	28.4425	6.318892	4.50	0.000	15.92827	40.95673

Figure 16: Upper and lower twenty percentile of *Supervisor Social Support* on *Work Engagement*

Source	SS	df	MS	Number of obs =	125
Model	3634.46702	7	519.209574	F(7, 117) =	11.10
Residual	5472.86098	117	46.7765896	Prob > F =	0.0000
				R-squared =	0.3991
Total	9107.328	124	73.4461935	Adj R-squared =	0.3631
				Root MSE =	6.8393

engagement	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
demands	.1435417	.1159176	1.24	0.218	-.086027	.3731105
resources	.2608029	.0660095	3.95	0.000	.1300745	.3915313
problems	-.7198926	.2317457	-3.11	0.002	-1.178853	-.2609324
cosp	-.1480304	.0564831	-2.62	0.010	-.2598922	-.0361685
spsp	.1745267	.0536987	3.25	0.002	.0681792	.2808742
personalre	-.0910769	.1049276	-0.87	0.387	-.2988805	.1167267
extremedifperssppdii	-2.515316	1.427855	-1.76	0.081	-5.343108	.3124771
_cons	34.22607	5.873862	5.83	0.000	22.59319	45.85894

Figure 17: Extreme difference *Supervisor Personal Support* and *IPDI* on *Work Engagement*

Source	SS	df	MS	Number of obs =	125
				F(7, 117) =	10.39
Model	3491.62639	7	498.80377	Prob > F =	0.0000
Residual	5615.70161	117	47.9974497	R-squared =	0.3834
				Adj R-squared =	0.3465
Total	9107.328	124	73.4461935	Root MSE =	6.928

engagement	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
demands	.1651842	.1168765	1.41	0.160	-.0662836	.396652
resources	.2573258	.0673752	3.82	0.000	.1238927	.3907589
problems	-.6943846	.2369652	-2.93	0.004	-1.163682	-.2250874
cosp	-.1396789	.0570369	-2.45	0.016	-.2526375	-.0267203
spsp	.162033	.0717472	2.26	0.026	.0199413	.3041246
personalre	-.1034355	.1061353	-0.97	0.332	-.313631	.1067599
extremedifpersspnatpdi	-.4854564	2.208678	-0.22	0.826	-4.859628	3.888715
_cons	33.47034	6.325288	5.29	0.000	20.94344	45.99724

Figure 18: Extreme difference *Supervisor Personal Support* and national *PDI* on *Work Engagement*

Source	SS	df	MS	Number of obs =	125
				F(14, 110) =	3.08
Model	21232.0482	14	1516.57487	Prob > F =	0.0005
Residual	54178.1438	110	492.52858	R-squared =	0.2816
				Adj R-squared =	0.1901
Total	75410.192	124	608.14671	Root MSE =	22.193

socialsupport	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
canteen	-1.143091	4.215682	-0.27	0.787	-9.497583	7.2114
kitchen	-4.294959	5.44413	-0.79	0.432	-15.08395	6.49403
softdrinks	-1.79901	5.421355	-0.33	0.741	-12.54286	8.944843
openwork	-.2866249	5.184732	-0.06	0.956	-10.56155	9.988296
space	-7.775305	5.099042	-1.52	0.130	-17.88041	2.3298
entertainment	-.7830405	5.23241	-0.15	0.881	-11.15245	9.586368
event	-3.87814	4.863241	-0.80	0.427	-13.51594	5.759662
bonus	6.81186	6.433463	1.06	0.292	-5.937754	19.56147
teambonus	-1.250386	5.508888	-0.23	0.821	-12.16771	9.666938
goal	4.596482	5.747529	0.80	0.426	-6.793772	15.98674
regperform	-11.7787	5.597492	-2.10	0.038	-22.87161	-.6857805
comperform	4.79283	4.989087	0.96	0.339	-5.094369	14.68003
spmeeting	-11.67361	5.261766	-2.22	0.029	-22.1012	-1.246028
teammeeting	-14.73194	5.195387	-2.84	0.005	-25.02798	-4.435905
_cons	169.8957	14.46256	11.75	0.000	141.2343	198.5571

Figure 19: Work environment attributes and good practices on *Social Support*

difsppernatpdi

	Percentiles	Smallest		
1%	5.341783	4.663008		
5%	10.34178	5.341783		
10%	13.69933	7.099363	Obs	125
25%	19.45691	7.469073	Sum of Wgt.	125
50%	26.69933		Mean	25.856
		Largest	Std. Dev.	8.885125
75%	33.34178	40.03872		
90%	36.69933	40.34178	Variance	78.94545
95%	38.97207	40.39627	Skewness	-.3364075
99%	40.39627	41.09937	Kurtosis	2.280386

Figure 20: Differences individual and nation PDI

Source	SS	df	MS		
Model	13079.5932	19	688.39964	Number of obs	125
Residual	18606.4068	105	177.203875	F(19, 105)	3.88
				Prob > F	0.0000
Total	31686	124	255.532258	R-squared	0.4128
				Adj R-squared	0.3065
				Root MSE	13.312

spsp	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
canteen	-1.688415	2.561984	-0.66	0.511	-6.768356	3.391526
kitchen	.2955583	3.402778	0.09	0.931	-6.451521	7.042638
softdrinks	-1.37733	3.321132	-0.41	0.679	-7.962522	5.207861
openwork	.9908577	3.161497	0.31	0.755	-5.277807	7.259522
space	-7.706766	3.139251	-2.45	0.016	-13.93132	-1.482211
entertainment	.5027517	3.184623	0.16	0.875	-5.811767	6.817271
event	-.5542442	3.007167	-0.18	0.854	-6.516901	5.408413
drink	-10.15954	2.834078	-3.58	0.001	-15.77899	-4.540084
bonus	6.862806	3.922087	1.75	0.083	-.913969	14.63958
teambonus	-2.234816	3.335161	-0.67	0.504	-8.847824	4.378193
goal	2.672921	3.55898	0.75	0.454	-4.383879	9.729721
regperform	-10.11501	3.479937	-2.91	0.004	-17.01508	-3.214938
comperform	4.386954	3.129654	1.40	0.164	-1.818572	10.59248
spmeeting	-7.478346	3.239103	-2.31	0.023	-13.90089	-1.055802
teammeeting	-4.58399	3.199435	-1.43	0.155	-10.92788	1.759899
sex	-3.488181	2.575816	-1.35	0.179	-8.595548	1.619185
spsex	4.841582	2.585826	1.87	0.064	-.2856344	9.968798
sexdif	3.060454	2.831328	1.08	0.282	-2.553547	8.674455
countrydif	2.308039	3.369242	0.69	0.495	-4.372546	8.988624
_cons	83.77198	12.59676	6.65	0.000	58.79494	108.749

Figure 21: Work environment, good practices, structural variables on Supervisor Social Support

Source	SS	df	MS		
Model	3542.06975	15	236.137983	Number of obs =	125
Residual	16439.3222	109	150.81947	F(15, 109) =	1.57
				Prob > F =	0.0953
Total	19981.392	124	161.140258	R-squared =	0.1773
				Adj R-squared =	0.0640
				Root MSE =	12.281

cosp	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
canteen	-1.027369	2.336378	-0.44	0.661	-5.657995	3.603256
kitchen	-2.892603	3.037404	-0.95	0.343	-8.912639	3.127432
softdrinks	-.5449402	3.002133	-0.18	0.856	-6.49507	5.40519
openwork	-1.286367	2.871837	-0.45	0.655	-6.978255	4.405521
space	.3910254	2.821924	0.14	0.890	-5.201937	5.983987
entertainment	-1.470742	2.895905	-0.51	0.613	-7.210331	4.268847
event	.0306997	2.758465	0.01	0.991	-5.436489	5.497888
drink	-4.282883	2.540916	-1.69	0.095	-9.318896	.7531299
bonus	1.891168	3.567249	0.53	0.597	-5.179003	8.96134
teambonus	-.0372009	3.056199	-0.01	0.990	-6.094488	6.020087
goal	2.025851	3.191479	0.63	0.527	-4.299557	8.351259
regperform	-1.396779	3.104373	-0.45	0.654	-7.549545	4.755987
comperform	2.132361	2.761768	0.77	0.442	-3.341373	7.606094
spmeeting	-4.410795	2.921371	-1.51	0.134	-10.20086	1.379267
teammeeting	-6.23699	2.930978	-2.13	0.036	-12.04609	-.4278871
_cons	82.02231	8.090936	10.14	0.000	65.98634	98.05828

Figure 22: Work environment attributes and good practices on *Supervisor Social Support*