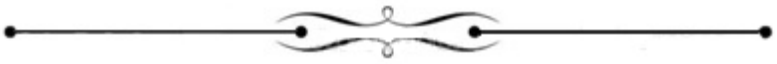
Linking Work-Related Stress with the Level of Extraversion in the Consultancy Business

A Correlation Study



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Abstract

Background: Work-related stress is a big problem in organisations today and there is an underlying issue when stress is not sufficiently considered in relation to personality traits. One personality trait that is especially relevant in today's society is the one of extraversion and introversion since we seem to live with an Extrovert Ideal. Still the number of introverts in society is considerate. A business where this is of particular interest is the consultancy business that is characterised by a stressful environment with high demands and high tempo.

Purpose: The purpose of this study is to investigate the relationship between WRS and the personality dimension extraversion, as well as potential moderators of this relationship, in the context of knowledge-intensive consultancy business. In order to do this we have asked the following research question:

Why do employees of the different personality type's extraversion and introversion perceive work-related stress differently in the consultancy business? Do employees of these personality types have a different need for recovery?

Method: In our quantitative study we have conducted a correlation study. Through a questionnaire combining different well-established scale items we have attempted to find out about consultants' level of extraversion, perceived stress and need for recovery. We have then conducted correlations and regression analysis in the gathered data.

Findings: Among the responding consultants, there is a normally distributed level of extraversion. The correlation analysis shows relationships between an individual's level of extraversion and work-related stress, as well as psychological stress hazards like control at work and social support at work. It also showed a relationship with need for recovery. We find no interaction effects proving that the level of extraversion would influence the relationship between stress hazards and work-related stress.

Conclusion: There is a difference in how extraverts and introverts in the consultancy business perceive stress, especially looking at dimensions like control at work and social support. Thus it is important that organisations understand these differences and implement changes that take employees of both personality types into account.

Key words: *Work-Related Stress, Extravert, Introvert, Need for Recovery, Consultancy Business*

Acknowledgement

The writing of this master thesis has been challenging. In the end we are happy with the result but we know it would not have been possible without the help and support from some people whom we want to thank.

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A really big thank you *to all that distributed and responded to our questionnaire*, we want to extend our gratitude. We know you are all very busy and we want you to know that without you this thesis would not have been completed.

Finally, we want to thank our *family and friends* that have taken the time for discussion, proofreading and mental support for these two (somewhat stressed) students.

"No one who achieves success does so without the help of others. The wise and confident acknowledge this help with gratitude."

Alfred North Whitehead

May 17th 2015, Stockholm

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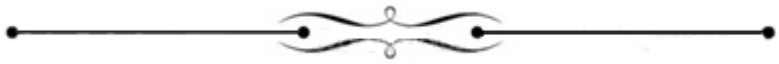
Abbreviations

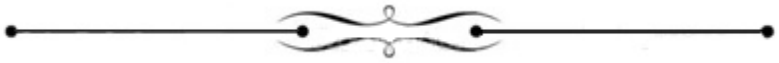
Acronym	Definition
COR	Conservation of Resources
DRIVE	Demands, Resources, and Individual Effects Model
E-R	Effort-Recovery
ESENER	Enterprise Survey on New and Emerging Risks
EU-OSHA	European Agency for Safety and Health at Work
HSE	The UK Health and Safety Executive
JDR	Job Demands-Resource
MS	Manager Support
NFR	Need for Recovery
OCEAN	Openness to experience, Conscientiousness, Extraversion, Agreeableness and Neuroticism
PSF	Professional Service Firm
PS	Peer Support
PSS	Perceived Stress Scale
PSS-I	Perceived Stress Scale index
SS	Social Support
WHO	World Health Organisation
WRS	Work-Related Stress
WRS-I	Work-Related Stress index

Definition of key concepts



Extravert Synonym: Extrovert	Extraversion refers to the attitude where the attention of an individual seems to be drawn to the objects and people of the external environment within which the individual exists. Individuals who are extraverts get their energy from external events, experiences, and interactions, and direct their energy and attention to the external environment (Based on Jung's (1971) definition; Wolk & Nikolai (1997)).
Introvert	Introversion refers to the attitude where the attention of the individual seems to be in the inner world of the mind. Individuals that are introverts get their energy from their internal thoughts, feelings, and reflections, and direct their energy and attention to their inner world (Based on Jung's (1971) definition; Wolk & Nikolai (1997)).
Job Control	Job Control includes to what extent employees can participate in decision-making affecting their work (Cox et al., 2000; Cox, T., and Cox, S., 1992).
Job Demands	Job demands are those physical, psychological, social, or organisational aspects of the job that require sustained physical and/or psychological effort or skills (Demerouti et al., 2001).
Knowledge workers Synonym: Gold Collar	Knowledge workers refer to all employees involved in the chain of producing and distributing knowledge products (Mosco & McKercher, 2007). These individuals are often highly educated and knowledge is their main asset (Cooper, D., 2006).
Recovery	Recovery is the period of time that an individual needs in order to return to a normal or pre-stressor level of functioning following the termination of a stressor (Craig & Cooper, 1992).
Social support	Social support is defined as information leading the subject to believe that he is cared for and loved, esteemed, and a member of a network of mutual obligations (Cobb, 1976).
Transactional stress	Transactional stress is the relationship between the person and their environment from which stressors arise (Lazarus & Folkman, 1984).
Work-related stress Synonym: Occupational Stress	Work-related stress is a psychological state that reflects and is part of a wider process of interaction between the person and their work environment (Cox et al., 2000).

1. Introduction



"The most important kind of freedom is to be what you really are. You trade in your reality for a role. You trade in your sense for an act. You give up your ability to feel, and in exchange, put on a mask. There can't be any large-scale revolution until there's a personal revolution, on an individual level. It's got to happen inside first."

Jim Morrison

1.1 Work-Related Stress - A Problem for Both Society and Businesses

Working life is changing across the world. According to Cox and Griffiths (1995) we have during the last decades, seen a decline in manufacturing and industry, an advance of IT and the service sector, and globalisation and international competition. This has created a landscape in work life with new challenges and problems for both organisations and employees. With these changes that affect technology, economies, globalisation, organisational processes and structure, employees are put under more pressure. They need to adapt more quickly, learn new skills and meet the high job demands at their work (Schabracq & Cooper, 2000). A negative outcome of these shifts in landscape of organisations is an increasingly stressful working environment (Griffiths, 1998).

Many workplaces today are affected by a high level of WRS and it is an increasingly problematic phenomenon that causes great costs for both businesses and societies. In Europe, stress is the second most reported health problem according to the European Agency for Safety and Health at Work (EU-OSHA)[1]. More than 50 percent of 16 622 employees from EU-OSHA's opinion poll 2013[2] reported WRS as common in their workplace and 40 percent believed that stress was not well handled in their workplace. The same poll showed that in Sweden, 57 percent believed WRS was common in their workplace. There is a mixed opinion about how well stress is handled at workplaces. Another survey from the Enterprise Survey on New and Emerging

[1] European Agency for Safety and Health at Work: https://osha.europa.eu/en

[2] The European Opinion Poll on Occupational Safety and Health, 2013: The European Opinion Poll on Occupational Safety and Health, 2013: https://osha.europa.eu/en/safety-health-in-figures/eu-poll-press-kit-2013.pdf https://osha.europa.eu/en/safety-health-in-figures/eu-poll-press-kit-2013.pdf

Risks (ESENER)[3] 2010, showed that 80 percent of European managers felt concern about WRS in their workplace and 50 percent felt that psychosocial risks (e.g. excessive workloads, lack of involvement in making decisions and lack of support from management or colleagues) are more challenging to manage than other safety and health risks. However, less than 30 percent of managers have implemented tools to deal with psychosocial risks. The UK Health and Safety Executive[4] have attempted to categorise the key work design factors that may cause stress-related health issues. These are presented as part of a "Management Standards" framework and include: Demand; Control; Support; Relationships; Role; and Organisational change (HSE, 2007). Relevant factors will be further elaborated in the Literature Review.

From an organisational view the outcome of WRS can be absences, bad turnover, conflicts and low productivity (EU-OSHA). Only in Britain the cost to businesses for employees on sick leave, was £13.8 billion in 2013 (HSE)[5]. For employees, WRS can cause many problems like irritability, conflicts with colleagues, lack of concentration, an increased risk for accidents, and illnesses such as heart problems and stomach ulcers. Long term stress can cause burnout, mental illness, insomnia, post-traumatic stress disorder, and depression (WHO)[6]. There is also the risk that WRS will "spill over" into an individual's time after work and therefore limit opportunities for relaxation and recovery, which then leads to impaired health and job performance (Allen et al., 2000).

1.2 Need for Recovery Should be considered in Relation to Work-Related Stress

In earlier stress research the emphasis had been on how employees can decrease or avoid stress at their workplace. Recently scholars have become aware of another important aspect, which is to be able to recover from stress. What determines stress-related illness is not only how stressed an individual is, but also how well the individual recover from stress (Geurts & Sonnentag, 2006). NFR is an important factor to be considered in relation to WRS since recovery from WRS can restore mood, improve wellbeing and reduce stress and fatigue (Sonnentag & Fritz, 2007). Relaxation after work can give energy back to the person so (s)he feels

[3] The European Survey of Enterprises on New and Emerging Risks, 2010: https://osha.europa.eu/en/publications/reports/esener1_osh_management
[4] HSE is an executive non-departmental public body, and acts in the public interest to reduce work-related death and serious injury across Great Britain's workplaces: http://www.hse.gov.uk/index.htm
[5] HSE Annual Statistics Report for Great Britain 2012/2013: http://www.hse.gov.uk/statistics/overall/hssh1213.pdf
[6] WHO, Stress at Work: http://www.who.int/occupational_health/topics/stressatwp/en/

refreshed. During the last decade researchers have made attempts to explain the process of recovery, and many state that individual factors determine the recovery process (Wessely, 1990). Cox et al. (2000) state that individuals have different needs for recovery and their ability to cope with demands will vary.

WRS also has to be considered from an individual's view. According to e.g. Paoli (2000) and Schaufeli (2001) individuals perceive stress differently, and stress levels will vary considerably depending on an individual's ability to cope with the situation. Studies have also shown that personality is one factor that can contribute to how people react to WRS (Simmons & Nelson 2007).

1. 3 Urbanisation and the Extrovert Ideal

If we look back a century in time our societies looked substantially different and people were concentrated around small communities rather than the big cities many of us live in today. During that time everyone in these communities most often knew, or knew about, each other, and the community was the focus rather than its individual members. When industrialisation came and urbanisation started, bigger communities (cities) were built and big businesses formed. People now stood before a new order where they were no longer citizens, but employees that had to be able to make a good impression on virtual strangers. With this change came a shift in social roles. Warren Susman (2003) called it a shift from the Culture of Character to the Culture of Personality, which signified the rise of the performing self. In this "new economy" where people were no longer citizens but employees, another personality type was sought after, one capable of selling both their company's products and themselves by being sociable and charismatic. This is what Susan Cain (2012) has called the Extrovert Ideal, where characteristics like, sociability, charisma and being outgoing have become associated with success, status and being well-adjusted in the Western culture.

1.4 Extraversion and the Misconception of Introversion

The Extrovert Ideal has created a society built around (and primarily for) people of the personality type extraversion[7]. Extraversion (and its opposite introversion) are personality types first presented by Carl Jung (1971) where he widely explained them as; an individual's orientation toward life. He explained that *extraverts* are drawn to the external life of people and activities and recuperate by socialising while *introverts*

[7] Note that an early misspelling caused extraversion to become extroversion, which is now often used but the terms denote the same thing.

have a rich inner life focusing on thought and feeling and recuperate by being alone. Since then, the terms have caught on other meanings in everyday language that are well mirrored in Cambridge Dictionaries[8] definitions:

- Extravert: an energetic happy person who enjoys being with other people
- Introvert: someone who is shy, quiet, and unable to make friends easily

This is a more popular/common way of looking at the two personality types; extraverts as sociable and introverts as shy (Wolk & Nikolai, 1997). This view has caused an image of introversion as something undesirable, a personality you do not want to have. It has even gone so far that the American Psychiatric Association (APA)[9] wanted to include introversion as a psychological diagnosis[10].

But this view is a misconception. Science and research from the last decades shows that introversion does not equal shyness, which denotes a lack of comfort when interacting with other people (Crazier, 1979). Introversion is rather a preference for a different level of social contact.[11] Research has also shown that a personality type is biologically ingrained in us, and even though introverts can assume extravert traits in some situations it is hard (if not impossible) to change one's personality completely (Soldz & Vaillant, 1999). Even though we live in a society where extraversion is the ideal, the level of extraversion is actually normally distributed in the population (Bergman, 2003). As many as one third of United States population is estimated to be introverts (Bayne, 1995), and United States is one of the most extraverted nations in the world (Allik & McCrae, 2004; McCrae & Terracciano, 2005).

Thus, no matter the view on introversion today it is still a fundamental part of many of us and something that needs to be addressed, on workplaces as well as society as a whole. There is also the fact that individuals of both personality types have advantages. There are actually several studies that have shown that within groups it is best to have individuals of both personality types in order to keep a good balance in the group, as well as increasing performance and cohesion (Walck, 2009; Neuman, 1999; Kristof-Brown et al., 2005).

[8] Cambridge Dictionaries definition of extravert and introvert: http://dictionary.cambridge.org/dictionary/british/
[9] American Psychiatric Association: http://www.psych.org/
[10] Psychology Today, April 21st 2010: https://www.psychologytoday.com/blog/self-promotion-introverts/201004/are-introverts-nuts
[11] Myers & Briggs explanation of extraversion & introversion:
http://www.myersbriggs.org/my-mbti-personality-type/mbti-basics/extraversion-or-introversion.htm

1.5 The Consultancy Business as a Context for High Stress and the Extrovert Ideal

Changes in society affect people in one way or the other. We have already noted that, in the past decades there has been a change in working life for people. While manufacture and other forms of industry has declined, the IT and service industries has increased (Cox & Griffiths, 1995; Schabracq & Cooper, 2000). One of these service industries is the consultancy business (Mohe & Seidl, 2011). In 1998 the total turnover of consultancy companies across Europe was 24.7 billion euros, by 2007 this number had more than tripled to an estimated 82.9 billion euros (FEACO, 2007)[12] The conceptual definition of consultancy is that to provide information, analyse information, identify and diagnose complex problems, recommend solutions for the problems, help managers to implement difficult decisions, and give managers support, or a combination of these activities (Schein, 1998). The consultancy business is regarded as a profession with knowledge workers[13] (Nordenflycht, 2010), defined as highly educated individual whose main asset is their knowledge (Cooper, D., 2006). In this profession other qualities beside knowledge are highly desirable, qualities like creativity, intuition, rhetoric and social abilities; essential characteristics that are associated with extraversion rather than introversion (Alvesson, 2004). What characterises the consultancy business is an often high workload and pressure on the employees (Berglas, 2006). This industry tends to have a higher degree of burnout among employees than do other businesses (Jemielniak, 2012). These characteristics make the consultancy business interesting to study from a WRS and personality perspective.

1.6 Summary

From the introduction we can derive that the development in society has created an environment where WRS has increased and in order to reduce high levels of WRS the NFR is necessary. We also know that society strives for the Extrovert Ideal, not least in our workplaces. There is a lot of knowledge about each respective research area but there is still a lack of research about how personality affects WRS. We know that personality matter in society and hence more theoretical knowledge and practical implications about the integration of personality traits and stress is important. The consultancy business is an industry where we can see high degrees of both the Extrovert Ideal and high levels of WRS. In this industry we can expect that introverts

[12] European Federation of Management Consultancies Associations: http://www.feaco.org/industry/annualsurvey

[13] As coined by Drucker, P. F. (1959). The Landmarks of Tomorrow. Harper and Row.

suffer greatly from stress since i) extravert qualities are expected from consultants and ii) many parts of a consultants work assignments could be expected to be a bad fit to an introverts needs and preferences. Since there is likely a high number of introverts working in the consultancy business it is important to understand both personality types in order to give all employees the right working conditions and deal with WRS. In order to do this we first have to understand the situation.

2. Purpose

"The greatest thing in this world is not so much where we stand as in what direction we are moving."

Johann Wolfgang von Goethe

Even though society has a preference for people of the personality type extraversion, we know that there are many introverts in our society and at our work-places that have different needs and preferences. Therefore it is important to understand the difference between extraverts and introverts in order to give people of both personality types the right conditions, especially at workplaces where people are the key resource. Since WRS is a major problem for organisations today we want to study the relationship between personality type and WRS. Therefore the purpose of this study is to investigate the relationship between WRS and the personality dimension extraversion, as well as potential moderators of this relationship, in the context of the knowledge-intensive consultancy business.

To help us to understand this aspect, we have formulated the following research question.

2.1 Research Question

Why do employees of the different personality type's extraversion and introversion perceive work-related stress differently in the consultancy business? Do employees of these personality types have a different need for recovery?

2.2 Expected Theoretical Contribution and Aim

With this study we aim to expand the literature about stress by adding the dimension personality, and specifically the level of extraversion. Most studies on personality and stress this far have been done more overall and focused on several personality dimensions instead of focusing on just one that might have an important role for how different individuals experience stress at work.

We know that personality is one factor contributing to WRS and studies have shown that different personality traits are connected to e.g. job burnout (Kim et al., 2007) and stress (Berg Saksvik & Hetland, 2011). These studies have focused on personality from a broader perspective, lifting several traits instead of focusing on one. Considering the many nuances of personality we feel that this is not enough. There is a need for a more focused study and our hope is to contribute with this through our research. Additionally some theoretical contributions have been made about the personality type and stress but there are some practical implications that we hope to fill out. Furthermore, NEO-PI-R is the most acceptable and most validated tool to measure personality traits (Young & Schinka, 2001) and it has very seldom been applied in the field of stress research. With our research we hope to bring that area of research to light.

Finally, it is important to understand the need for individual recovery and the individual's ability to regain energy since there have been demanding changes in working conditions in recent years. We want to connect NFR with the experience of stress and personality traits. We believe that this can contribute to a more holistic understanding of the phenomenon stress.

3. Thesis outline

"I don't know where I'm going, but I'm on my way."

Carl Sandburg

3.1 Scope

First pillar: The phenomenon stress is widely researched and there are numerous theories that reflect different perspectives of stress (Cox et al., 2000). In this report we want to investigate why individuals of different personality types experience stress differently at work. Hence we will limit the area of stress research to a psychological approach in the area of transactional stress, where the focus is on individual differences. We will not examine physical stress symptoms but rather focus on the perceived experience. Additionally we will not examine eustress[14] as we only want to focus on the impact of negative stress. We will however investigate the NFR. People vary in their ability to cope with job demands and in their perception of those abilities (Cox et al., 2000). It is therefore interesting to investigate whether NFR after a work day differ between different personality types.

The second pillar: Our focus is on psychology, and more specifically the personality traits extraversion and introversion. Other perspectives on personality such as psychoanalysis and social constructivism are outside our scope.

Third pillar: We have chosen to study the consultancy business because of the profession's characteristics. The profession is also very much about situational adjustment, which produce some level of uncertainty that can generate stress amongst employees (Alvesson, 2004). One can argue that knowledge workers often are "insecure overachievers" (Berglas, 2006), and considering the characteristics of the consultancy business it can create a context where it is relevant to study their perceived level of stress at work.

[14]The concept Eustress is definded by Quick et al. (1997) as "healthy, positive, constructive outcome of stressful events and stress response" (p.4).

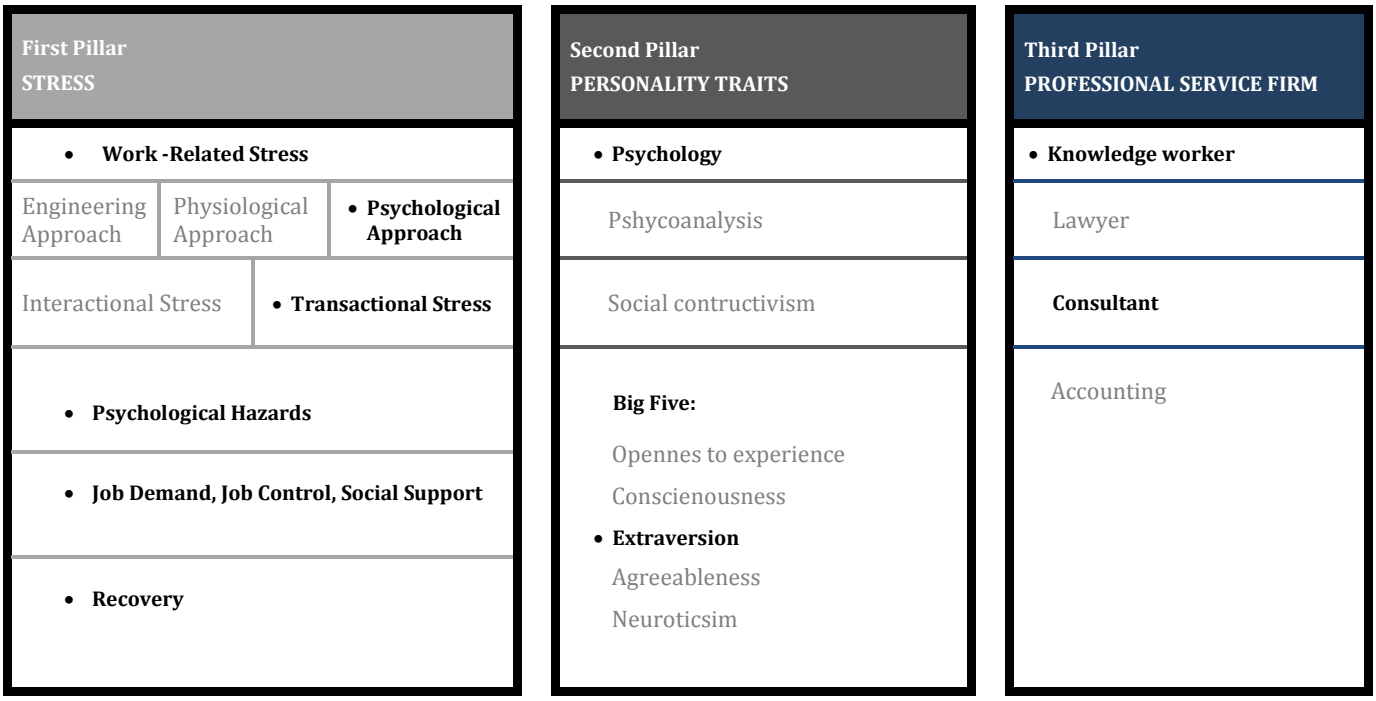


Table 1 - The Three Pillars of Our Study

• In the Scope of our focus

3.2 Disposition

The disposition we have adapted in our thesis follows an approach with a more exhaustive introduction and literature review section, which includes theory about WRS, personality traits, recovery and the consultancy business. The structure will then get slimmer as we narrow it down in the methodology and results section, where we will disclose our findings. As we move to the analysis part the thesis we will discuss and deduct our finding in order to give implications. The last section is where we review our conclusions.

Introduction

In this section we briefly introduce the social roles that have changed over time in our society, which have evoked a favour for the personality type extraversion. We also present the new work situation landscape where stress has become a very common condition in society. Additionally we touch upon the need for recovery and the consultancy business. In the introduction we present the background that will be the subject for our research.

Literature Review and Hypothesis Generation

In the literature review we present existing academic research about our topics where we provide a definition of the theoretical matters and present the relevant theoretical models of our research. We start out by giving a general overview of the influential theoretical models and then narrow it down to the most relevant models. In the section about WRS we will explain different approaches that can be undertaken and then guide the reader to the main stress model we will adopt. The reader will also be introduced to recovery theories. In the section about personality the reader will be introduced to concepts like the Big Five and the characteristics of introverts and extraverts. We sum up this section by describing the theoretical gap and our proposed framework as we generate our hypotheses in order to answer our research question.

Methodology

We present our scientific approach where we provide a description of our research design, data collection, discussion about the reliability and validity of the data and methodological limitations.

Results

Here we present the findings from our statistical analysis and report the outcome of our hypotheses.

Discussion

In this section we will discuss the findings of our hypotheses and connect these to theory. We then analyse and interpret the results. We will provide practical implications and a discussion about limitations and future research will also be provided for the reader.

Conclusions

Finally we wrap it up by addressing our research question and giving some overall remarks.

4. Literature Review

"Science is organized common sense where many a beautiful theory was killed by an ugly fact."

Thomas Huxley

This section will provide a general overview of existing theory and research in the areas WRS, stress recovery, personality traits (with a focus on extraversion and introversion) and the consultancy business. Subsequent sections will identify the theoretical gap and our theoretical framework will be explained. The reader will then be guided through the hypotheses.

4.1 The Vast Ocean of Definitions of Work-related Stress (WRS)

It was during the 1960's that larger interests in the field of occupational stress started to emerge (Johnson & Hall, 1996). It is today a vast topic with numerous definitions and theories (Dewe et al, 2012), and it is a fine line between these definitions and theories.

According to Dewe et al. (2012) definitions of work-related stress are products of their time; hence the definition will change with time. The earlier definitions define the phenomenon as a stimulus, a response, or an interaction of the two. These definitions provided information of the nature and characteristics of the components (Dewe, O'Driscoll & Cooper 2010). The stress definitions of today focus more on providing an understanding of the complexity and richness of the stress process itself (Dewe, 2001; Dewe et al., 2010). The authors Dewe and Trenberth (2004) explain that it is common for researchers to remark on the difficulty regarding definitions of stress. Cox and Griffiths (1995) claim that there is little consensus to the definition of the term work-related stress. Dewe et al. (2012) argue that each theory will have its own focus even if there are common foundations, since the set of components are linked together in a process-oriented relationship. The idea of process is about fit or balance. Here are two definitions that try to incorporate the idea of fit or balance:

- Work-related stress is a psychological state which reflects and is part of a wider process of interaction between the person and their work environment (Cox et al., 2000).

- Work-related stress is the result of the mismatch in job resources and the increasing pressure to perform well (Hendrix et al., 1991).

4.1.1 Three Approaches to WRS

Even though researchers have yet to come to a united definition of work-related stress, Cox and Griffiths (1995) claim that there are three types of conceptions of the nature of work-related stress. In the academic field these approaches are used to define and study occupational stress (Lazarus, 1966; Cox, 1978, 1990; Cox & Mackay, 1981; Fletcher, 1988; Cox, 1993). Below we explore the three approaches in detail.

Engineering approach: The first conception is the engineering approach that views work-related stress as a stimulus characteristic of the person's environment, usually perceived in terms of the load or level of demand placed on the individual (Cox, 1978, 1990; Cox & Mackay, 1981; Fletcher, 1988). The engineering approach treats stress as an independent variable – the environmental cause of ill health (Cox et al., 2000).

Physiological approach: The second approach views work-related stress as physiological effects to a wide range noxious stimulus. The approach is based on physiological or biological changes that occur in the person when they are in a stressed state. This approach treats stress as a dependent variable - physiological response to a threatening or damaging environment (Cox et al., 2000).

Psychological approach: The third approach is developed by Cox and Griffiths (1995) and describes work-related stress in terms of the dynamic interaction between the person and their work environment (Cox et al., 2000). This approach takes the cognitive processes and emotional reactions into account and underpins those interactions.

The three approaches are to some extent overlapping but the last one is considered more adequate in the research of occupational stress (Cox et al., 2000). The first two approaches have been criticized for both their empirical method and their conceptual view (Cox et al., 2000). Numerous researchers advocate that the empirical method of the two approaches are not adequately explained and are biased (Douglas 1992; Cox & Cox, 1985). These treat individuals as passive mechanisms for stimulus and response and therefore ignore the effects of cognitive or situational factors (Mark & Smith., 2008). The third approach of defining work-related

stress has a larger consensus (Cox & Cox, 1993; Cox, 1993; Cox & Griffiths, 1995), creating a higher level of coherence in the field of work-related stress (Cox et al., 2000). The psychological approach model has emerged because of the criticism of the two other approaches; hence we will in this thesis explore work-related stress with a psychological approach.

4.1.2 Within the Psychological Approach - The Interactional and Transactional Views

There are two versions of the psychological approach that dominate contemporary stress theory, the interactional and the transactional. The interactional stress theory focuses on the structural characteristics of the person's interaction with their work environment. It looks at what specific stressors are likely to lead to certain outcomes in different populations. The transactional stress theory instead focuses on the psychological mechanisms that derive the interaction (Cox et al., 2000; Mark & Smith, 2008). It means that the transactional model is concerned with coping and cognitive appraisal, focusing on the dynamic relationship that occurs between individuals and their environment in terms of mental and emotional processes (Cox et al., 2000). Since the transactional stress theory acknowledges the impact of individual differences like differences in personality, locus of control and coping and appraisal (Cox et al., 2000) we have chosen to focus on these theories because it will give a better understanding for our research about how introverts and extraverts experience work-related stress. The theories within the area of transactional stress have common elements. One of the earliest and most influential transactional theories was Lazarus and Folkman Coping transactional model (Mark & Smith, 2008). Other influential transactional stress theories are JDR Model[15], DRIVE Model[16] and Cox et al.'s stress theory. We have chosen to focus on Cox et al.'s transactional stress theory since the theory is up to date, more validated and provides a richer explanation of stress and individual differences than the other models.

4.1.3 The Transactional View - Cox et al.

Cox et al. (2000) developed a framework from Lazarus and Folkman's Coping transactional model, where Cox et al. (2000) have a more clarified structure and a bigger focus on individual differences than Lazarus and Folkman (Mark & Smith, 2008).

[15] Job Demands-Resource Model

[16] Demands, Resources, and Individual Effects Model

The structure of Cox et al.'s framework is divided into five stages. The first stage it is about demand of the environment; the second stage brings up the topic of individuals' perceptions of these demands relative to their ability to cope. The third stage represent the mental and physical changes a person undergoes due to stress, this stage involves secondary appraisal and coping where Cox describe the psychological changes that occur of the state of stress. The perceptions of social support and control are emphasised as factors in the appraisal process. The fourth stage is associated with the outcomes of coping and in the last stage of the model the subject of feedback is discussed, which the author advocate to occur in relation to all other stages (Cox et al., 2000).

4.1.4 Cox et al.'s Description of Psychosocial hazards

Since occupational stress psychology started to emerge during the 1960'-s the focus has moved to certain aspects of the working environment (Cox et al., 2000). Many researches on how psychosocial hazard factors trigger stress at work have been conducted and there are now a wide range of evidence (e.g., Cox, 1993; Landy et al., 1994; Kasl, 1987 & 1990). They have identified a number of work characteristics that are considered as potentially hazardous. These hazardous factors can be both physical and psychological that affect health directly or indirectly. Physical hazards are e.g. loud noises, poor physical working conditions, bad temperature and humidity at the workplace. Psychological hazards are e.g. poor communication, work overload and role conflict. The structures of the psychological hazards are divided into four dimensions; quantitative overload, qualitative under-load, lack of control over work and lack of social support. These are further divided into the two aspects Context to Work and Content of Work. Together they represent ten different categories of job characteristics and in the ten categories Cox et al. have provided some example of psychological stress hazard connecting to work environments and organisations (see Table 2).

Context to Work	
Category	**Conditions defining hazards**
▪ Organisational culture and function	Poor communication, low levels of support for problem-solving and personal development, lack of definition or organisational objectives.
▪ Role in organisation	Role ambiguity and role conflict, responsibility for people.
▪ Career development	Career stagnation and uncertainty, under promotion or over promotion, poor pay, job insecurity, low social value to work.
▪ Home-work interface	Conflicting demands of work and home, low support at home, dual career problems.
▪ Control/ Decision latitude	Low participation in decision making, lack of control over work. (Control, particularly in the form of participation, is also a context and wider organisational issue).
▪ Interpersonal relationships at work	Social or physical isolation, poor relationships with superiors, interpersonal conflict, lack of social support.
Content of Work	
Category	**Conditions defining hazard**
▪ Workload/ Work Pace	Work overload or underload, lack of control over pacing, high levels of time pressure.
▪ Work environment and work equipment	Problems regarding the reliability, availability, suitability and maintenance or repair of both equipment and facilities.
▪ Task design	Lack of variety or short work, cycles, fragmented or meaningless work, underuse of skills, high uncertainty.
▪ Work Schedule	Shift working, inflexible work schedules, unpredictable hours, long or unsocial hours.

Table 2 - Cox et al.'s Psychological Hazards

4.1.5 Our Focus of Stressful Characteristics at Work - Job Demands, Job Control and Support

Cox et al. (2000) state that the experience of stress depends to some extent on the individual's ability to cope with the demands placed on them by their work. The way in which they subsequently cope with those job demands and related issues of job control and support will affect the stress level. We will therefore mainly focus on the stressful characteristics of work related to job demands, job control, social support and their coping process (in our case need for recovery).

***Job demands**:* Job demands is defined as those physical, psychological, social, or organisational aspects of the job that require sustained physical and/or psychological effort or skills (Demerouti et al., 2001). Examples of job demands are high work pressure, unfavourable physical environment and emotionally demanding interactions with clients (Cox et al., 2000). When employees perceive too high job demands researchers have shown that it, in the long term can lead to sleeping problems, exhaustion, and impaired health (e.g. Doi, 2005; Halbesleben & Buckley, 2004). High job demands will negatively affect perceived stress.

Job Control: Many researchers agree that the variable control plays an important part in how a person perceives stress at work (Dewe, 1991; Cox et al., 2000). The stress level can be influenced by how much control the person has over their work (Dewe, 1991). Job control can e.g. include to what extent employees can participate in decision-making and affecting their work (Cox et al., 2000). Cox & Cox (1992) argued that empowering employees to plan their own work, control their workloads and have decision about how the work should be executed are beneficial. Neufeld & Paterson (1989) however warn that having too much control also can be a cause of stress. There is empirical evidence proving that the combination of high job demands and low job control is an important predictor of psychological strain and illness (Karasek, 1979; Schnall et al., 1994).

Social support: Social support is defined as information leading the subject to believe that he is cared for and loved, esteemed, and a member of a network of mutual obligations (Cobb, 1976). In the field of social support many academic reviews argue that it can reduce stress. Either receiving actually supportive help or just the knowing that support is available is positives (Cohen et al., 2000). Many studies have found a lowered stress level when a person receives support. E.g. Lobbana et al. (1998) observed that when supervisory styles provided direction and communication with employees could play a significant role in the stress process. A

study by Karasek et al. (1982) examining over 1, 000 male employees in Sweden, showed that support from supervisors and colleagues buffered the effects of job demands on depression and job satisfaction. Fielden & Peckar (1999) found that the number of hours worked was positively related to the perceived availability of social support. Caplan et al. (1975) claim that social support can reduce the impact of stress by fulfilling important humans needs like social contact and emphasising positive work aspects like approval and affiliation. Social support can also function as a moderator and by offering support from colleagues, supervisor and customers the individual can gain resources needed to adapt and react positively to stress (Goolsby, 1992). There are three sets of relationships: relationships with superiors, relationships with subordinates and relationships with colleagues (Sauter, 1992). Our focus will be one the support from the manager and colleagues.

4.2 Need for Recovery - Differences Between Individuals and Time Periods

Recovery is defined by Craig & Cooper (1992) as the period of time that an individual needs in order to return to a normal or pre-stressor level of functioning, following the termination of a stressor. How people return to a normal pre-stressor level depends on numerous individual factors (Wessely, 1990). Beside the individual factors the actual period of time to recover from work is important. To fully understand the issue of recovery one needs to focus on the variance within individuals and within short time periods, since there will be differences from day to day (Bakker & Oerlemans, 2014).

There are very few theories and models that have made an effort trying to explain the recovery process. The most common are the Conservation of Resources Theory, the Effort-Recovery Model and Sonnentag & Fritz' Model of Recovery Experiences. The different researches stream have shown mixed outcomes on this topic since people have different views on what they consider a recovery activity (Bakker & Oerlemans, 2014). However they point in the same direction regarding the benefit of recovery. Studies have suggested that to be able to recuperate well from job stress individuals need to recover. NFR can restore mood, improve wellbeing as well as reduce stress and fatigue (Sonnentag & Fritz, 2007).

4.2.1 The Conservation of Resources (COR) Theory

The COR theory (Hobfoll & Shirom, 1993; Hobfoll, 2001) explains that “individuals strive to obtain, retain, protect and foster those things that they value”. It can be personal characteristics, conditions or material objects. These variables are defined as resources in the COR theory. A “resource” is anything that is important to the person (Hobfoll, 2001). When one's valued resource is threatened, e.g. when a work situation unfavourable stress will occur and recovery is needed to ease the stress. The theory further explains that the recovery occurs when a person find an activity that can refill the energy reserves (Hobfoll, 2001). In the COR the recovery activities are e.g. leisure time where a person find relaxation by reading books or find quiet time for ourselves. If a person does not get recover and the stress level can culminate in burnout. Burnout is defined as a sense of emotional exhaustion.

4.2.2 The Effort-Recovery (E-R) Model

Meijman & Mulder developed the Effort-Recovery model in 1998. The model’s main key is that individuals need to show effort and devotion to their tasks in order to fulfil responsibilities in life, which the authors refer as allostatic load. The allostatic load can lead to several physiological and psychological changes. Furthermore the author explain that the allostatic load evoke a complex series of interrelated neurochemical processes in the brain that release hormones. The changes that happen in the brain are reversible and recovery as a mean can facilitate the physiological outcome. For example recovery can lessen the stress level. However if the recovery is insufficient the hormone will get excessive and can damage glucocorticoid receptors in the limbic system (McEwen, 2003). In other words, if recovery is hampered it can in the end lead to burnouts.

Meijman & Mulder (1998) suggested that, in order to decrease the allosteric load the individual needs to recover from the effort (stressor) that caused stress by terminating it. It is important that the actual source of stress cease and the individual gain proper recovery since effort and strain that cause stress can still be active after the termination. That is why thinking about a previous stressful situation or reflecting on an upcoming stressful scenario can create stress in the moment. In Meijman & Mulder’s E-R model the authors divided the factors that affect the consequences of stress into two categories; factor causing effort and factors influencing recovery (Meijman & Mulder, 1998)

Factors causing Effort: The factors causing effort that is described in E-R model are marital dissatisfaction, family difficulties, limited mindfulness and factors that cause effort related to work are unutilised flexible work arrangements and workload. If the employee get no flexibility at work and lack control over job demands this can also increase effort according to the E-R model. When individual experience that the workload is excessive they cannot carry out their obligations which can evoke anxiety. If a person get too stressed it is also likely that they feel less motivated to be socially engaged with colleagues, family or friends (Meijman & Mulder, 1998)

Factors causing Recovery: The need of recovery is crucial to decrease stress, some researchers argue that recovery is passive, e.g. the recovery factors like sleep or rest. Here the adequate timing is important to fulfil the recovery process. Too little sleep or to short breaks may not be enough for an individual that recover from stress. Other researchers argue that is active recovery where the individual own behaviour can facilitate recovery (Kristal-Baneh et al., 1996). The active recovery factors are e.g. leisure activities such as creative hobbies, reading book or social activities. Other recovery factors are voluntary work, beneficial work and vacations (Meijman & Mulder, 1998). Recovery during work hours can include meal breaks, diversions from demanding tasks, social conversations with colleagues. The E-R model however states that recovery often unfold after the work day (Sluiter et al., 2000).

4.2.3 Sonnentag & Fritz' Model of Recovery Experiences

The authors Sonnentag & Fritz (2007) have based their model from both the COR model and the E-R model. However the authors claim that there is no specific activity that will help the individual to recover from job stress. Instead the authors suggest that it is the underlying attributes of the activities "recovery experience" that are the important factors for recovery. In their study Sonnentag & Fritz examine four recovery experiences: psychological detachment, relaxation, mastery and control. The results from the study have however only partly been supported by previous studies conducted in Germany (Burke and El-Kot, 2009).

Psychological detachment: Psychological detachment from work is the capacity of individuals to uncouple from their work tasks (Sonnentag & Fritz, 2007). Studies have shown that when individuals are detached from their work fatigue is evoked (Brosschot et al., 2006 and Sonnentag et al., 2008).

Relaxation: Relaxation exercises can reduce the effect of stress at work. Relaxation is considerate as very effective as a recovery experience in a situation when stress is anticipated (Sonnentag et al., 2008). Relaxation is for example activities that require low social, physical or mental demands, such as walking or meditation (Sonnentag & Fritz, 2007).

***Mastery*:** Individual can also find recovery from activities that can challenge them and give them enlightening. Activities as such are learning new skills for example learning new languages. Mastery requires a degree of self-regulation. Studies have shown that mastery evoke psychological well-being among participants that had experiencing the learning of new skills (Sonnentag, 2006)

Control: Studies have shown that when an individual have a sense of control over their life outside work it will enhance recovery (Hobfoll & Shirom, 1993; Sonnentag & Fritz, 2007). Control is defined in this model as the individual's own decision on which activities to engage in, when to do it and how to perform it in her leisure time (Sonnentag & Fritz, 2007).

4.3 Finding a General Disposition to Describe Personality

Atkinson et al., (1996) define personality as:

"*The distinctive and characteristic patterns of thought, emotion, and behaviour that define an individual's personal style of interacting with the physical and social environment*."

Mostly though when we describe personality we do so in traits like intelligent, extraverted or emotional. Since there are countless traits to describe individual differences in any language (there are about 18,000 in the English dictionary), personality theorists have over decades attempted to organise traits into a few manageable basic dimensions of personality that can still encompass the diversity of human personality (Digman 1990). Subsequently they have come up with hundreds of alternatives and factor analysts have then tried to bring order to the confusion and find more general dispositions (Digman 1990, McCrae & John, 1992). Over the years researches have arrived at different dispositions, for example the "Big Two" (Eysenck, 1970) and "Sixteen Personality Factor System" (Cattell, 1970). But the one most agreed upon and widely used is the "Five-factor model" or "Big Five".

4.3.1 The Big Five Model of Personality

It was only in the 1980s that enough evidence had been found to conclude five fundamental dimensions of personality and in 1990 that all traits were shown to have solid validity across instruments and observers. The model was presented by Tupes & Christal (1992) and divided into five dimensions forming the acronym OCEAN; Openness to experience, Conscientiousness, Extraversion, Agreeableness and Neuroticism. In literature the division has been denoted the Big Five (Goldberg, 1981). Researchers have found that the traits are mainly biological and hereditary and stable over time. Though they agree that the model might not be completely accurate and that it is possible there are other basic dimensions of personality, they also are in agreement that all the five dimensions (or similar) are necessary in order to give an adequate description of individual differences (Digman, 1990). One of the five dimensions; Extraversion is especially interesting in today's society where we have a tendency to prefer one over the other (see Introduction).

4.3.2 The Many Nuances of Extraversion and Introversion - Biology and Upbringing

We need to separate the scientific view of extraversion and introversion from the view society presents, there are in fact many studies about extraversion and introversion that can give us a more realistic view of what the personality type really entails. The person to first introduce the concept of extraversion and introversion in psychology was Carl Jung in 1921 (Jung, 1971) when he published a then revolutionary book where he introduced these personality types as central building blocks for personality.

Jung described *introverts* as having a rich inner life focusing on thought and feeling and recuperating by being alone, while *extraverts* are drawn to the external life of people and activities and recuperate by socialising.

Despite the fact that Jung's general view of extraversion and introversion is not accepted by "mainstream" psychological research today, scientific definitions are still in line with his. Based on Jung's definition, Wolk & Nikolai (1997) define the traits as follow:

Introversion refers to the attitude where the attention of the individual seems to be in the inner world of the mind. They get their energy from their internal thoughts, feelings, and reflections, and direct their energy and attention to their inner world. Individuals with an introverted attitude tend to focus their perception and

judgment on concepts and ideas. They tend to have depth of interest, a concern with the clarity of concepts and ideas, a contemplative detachment, and an enjoyment of solitude and privacy. They prefer to communicate in writing, and learn by reflection.

Extraversion refers to the attitude where the attention of an individual seems to be drawn to the objects and people of the external environment within which the individual exists. Individuals with an extraverted attitude tend to be more aware of and rely on the external environment for stimulation and guidance. They get their energy from external events, experiences, and interactions, and direct their energy and attention to the external environment. They tend to focus their perception and judgment on people and objects, and often are action-oriented, frank, and expressive. Oral communication comes easy to them, and they learn through doing and discussing.

It is important to remember that there are fundamental biological differences between introverts and extraverts caused by e.g. a different tolerance for the neurotransmitter dopamine (a chemical in the brain released to send signals to the nerves). This shows itself in a difference in need for stimulation as proved by e.g. Golimbet et al (2007) and Eysenck & Eysenck (1967). Introverts react more strongly to external stimuli (e.g. sound, as proven by Geen (1984)) and therefore have a preference for less external stimuli than extraverts. It is likely because of this difference that introverts generally prefer more quiet activities like reading or having dinner with close friends or family while extraverts like to seek out new people and experiences. Studies have also shown that:

- Introverts have less tolerance for sound and perform worse than extraverts when being exposed to noise (e.g. Colin, 1971; Geen, 1984; Lynn, 1990; Cassidy & McDonald, 2007).
- Introverts perform better than extraverts in periods with less sleep (Taylora & McFatterb, 2003).
- Introverts have better endurance for boredom and are better at keeping focus (Kanevsky & Keighley, 2003; Thackray et al., 1974).
- Introverts prefer to work in a curtained environment (Jonkman[17], 2014; Block & Stokes, 1989). The social dimensions of work affect an introvert more intensively than an extravert (Fink, 2005).

[17] ”Blir introverta glada när du ställer in ett möte?” February 2014: http://www.linusjonkman.com/?p=4262

- Extraversion has a connection to optimism (Marshall et al., 1992). There is also a strong correlation between extraversion and self-esteem (Robins et al., 2001).
- Extraverts have a quicker response time than introverts and perform better under pressure (Vlad Burtăverde, 2011; Corina, 2007).
- Extraverts prefer multitasking in their work (Girgis, 2010).
- Extraversion has a strong connection to risk taking and people with a high level of extraversion can affect and dominate group decision processes (Nicholson et al., 2005; Rim, 1964).

Jung also suggested that while everyone usually has one side more dominant than the other (the level of extraversion is generally measured on a scale (Bergman, 2003)) they usually have both an extraverted and an introverted side. It is most often visible when we are put in different situations (and/or with different people) and stems from the fact that extraversion and introversion interact with other personality traits, and also with our personal backgrounds. These many nuances of personality make it hard to categorise people as one type or the other without doing more complex tests.

4.4 The Nature of the Consultancy Business - Knowledge Workers with Golden Collars

The consultancy business is classified as a professional service firm (PSF), (Nordenflycht, 2010). The PSF is characterised by high professionalised workforce, knowledge-intensity and low capital intensity. The most important feature to be classified as a PSF is knowledge-intensity (Nordenflycht, 2010). To be classified as a PSF a business does not have to fulfil all three characteristics. The consultancy business fulfils the two last criteria's.

The key asset in PSF is human resources. The motto is: the employees are the firm's biggest asset (Maister, 2007). Peter Drucker (considered the father of modern management) stated that employees were to be considered as assets to a company and not liabilities. Peter Drucker was also the first to coin the definition of knowledge workers (Drucker, 1959). The characteristics of knowledge workers are individuals with high education, high mobility and "think for a living" (Cooper, D., 2006). The feature of the work process of knowledge workers is non-routine, problem solving that requires a combination of creative thinking, divergent and convergent (Reinhardt et al., 2011). The knowledge worker often have more independence in

controlling the process of their own work and higher salaries than “regular workers” and that is why knowledge worker are sometimes called gold collars. The majority in the consultancy business are knowledge workers (Kelley, 1986).

A consultant is defined as "someone who has influence over an individual, group, or organisation, but who has no direct authority to implement changes" (Block, 2011). Schein (1998) describes that consultants’ first principle is to be helpful. In the consultancy business there is a bigger focus on the individual character rather than specific knowledge (Alvesson, 2004). In this profession, skills like creativity, intuition, rhetoric and social abilities is highly valued. Rhetoric is very important in order to create reliability and social skills very important to create good customer relationship (Alvesson, 2004). These set of skills can be more demanding for introverts than extraverts hence it require more social engagement.

The profession is also often characterised by group work, client orientation, situational adjustment and uncertainty. Uncertainty and high variation can sometime create problems and if uncertain situations get too unpredictable they can undermine the knowledge worker’s self-esteem and professional identity which can increase the stress level. Also, since employees invest a lot of themselves in their work, they may react especially strongly to uncertainties in performance and loss of status (Alvesson, 2004).

4.5 The Relationship between WRS, the Level of Extraversion, and the Consultancy Business

The consultancy business is known for being stressful with a high tempo and long hours (Berglas, 2006). We know that extraverts are considered more positive and optimistic than introverts (Marshall et al., 1992) and that they like when things are happening in a fast pace (Golimbet et al., 2007). They also have a quicker response time than introverts and perform better under pressure (Vlad Burtăverde, 2011; Corina, 2007). Introverts on the other hand have less tolerance for sound and perform worse than extraverts when being exposed to noise (e.g. Colin, 1971) and thus prefer working screened off (in an office or closed workspace). Introverts also have a higher need of security, and uncertainties like insecure competence in the consultancy business (Alvesson, 2004) will likely increase their stress levels. Because of this it is likely that introverts will feel more stress than extraverts in the consultancy business with its fast tempo and demanding atmosphere.

Stress in the workplace can be cause by several stress hazards, one of which is job demands (Cox et al., 2000). In the consultancy business high job demands for employees is common (Berglas, 2006). As described in the section about job demands, employees can experience higher levels of stress if they get exposed to high work pressure, unfavourable physical environment or emotionally demanding interactions with clients (Cox et al., 2000). In the consultancy business, client relations are very important and the profession often require social skills in order to build good client relationships (Alvesson, 2004). Introverts may experience social interaction as demanding since they are less interested than extraverts in the external life of people and socialising, and they feel exhausted after being exposed to much social activity (Jung 1971). Research has shown that extraverts and introverts have different needs for stimulation, and that introverts react more strongly to outer stimulation (Golimbet et al., 2007; Eysenck & Eysenck, 1967). Job demands can create high stimuli, like emotionally demanding interactions with clients (Cox et al., 2000) and thereby cause more stress for introverts. Also, high job demands can include high tempo at work, more simultaneous tasks and work with short deadlines. These might cause introverts to feel more stress than extraverts since studies have shown that extraverts are better at dealing with many things at the same time (Girgis, 2010). The characteristics of the consultancy business create a better fit for extraverts.

Job Control is another stress hazard that can affect the level of WRS perceived (Cox et al., 2000). Introverts are better at keeping focus than extraverts (Thackray et al., 1974), something that indicates they prefer to process one thing at a time. They are less likely to take risks than extraverts (Nicholson et al., 2005) and we deduce that they appreciate routines and security in life. This combined with sensitivity for stimulation (as explained above) makes us believe that introverts will feel less stress (compared to extraverts) when they experience that they have control over the situation. Having too high job demands and low job control will accelerate the perceived stress level (Karasek, 1979; Schnall et al., 1994) and if introverts lose job control they may experience more stress than an extravert in the consultancy business. The same goes the other way around, Neufeld & Paterson (1989) warned that having too much control can also cause stress. We believe that introverts tend to want more control than extraverts.

Social support will work as a counter against stress (Cooper et al., 2000). Reviewing the section of social support, we find that Caplan et al. (1975) argue that social support can reduce the impact of stress by fulfilling

important human needs, the need for social contact and approval and affiliation. Social support and encouragement is a more helpful form of support than sympathy (Cooper et al., 2000). As we know introverts get their energy from internal thoughts, feelings, and reflections, and direct their energy and attention to their inner world (Wolk & Nikolai, 1997). We know that introverts prefer more quiet activities and enjoy solitude and privacy and we can assume that they do not have the same need to belong to a group that extraverts do, they can even go long periods without social interaction (Francis, 1969). This might make them reluctant to ask for help but social support as a counter against stress is likely of extra importance in the consultancy business where the social aspects of the work are so strong. Extraverts find their energy externally in events, experiences, and social interactions. They find it easy to communicate orally, express themselves and participate in discussions (Wolk & Nikolai, 1997). It would only be natural if extraverts surround themselves with colleagues and supervisors at work and are confident to ask for help if they need it.

Employees may recover from mobilising extra energy by taking a break, switching tasks, or performing less demanding activities (Demerouti, 2001). Deep focus comes naturally for introverts (Thackray et al., 1974) and hence they tend to have less need for breaks. They prefer privacy (Jonkman[18], 2014; Block & Stokes, 1989) and are more affected by the social dimension of work (Fink, 2005) and thus too many interruptions might create additional stress for introverts. Introverts are also more durable to tediousness than extraverts (Kanevsky & Keighley, 2003). Looking at the consultancy business that is characterised by group work, client orientation, situational adjustment and uncertainty (Alvesson, 2004), introverts can be assumed to have a higher need for recovery after a work day than extraverts. Also after e.g. an intensive meeting with a lot of social contact an introvert will likely need to recover more than an extravert that thrives with social contact.

[18] ”Blir introverta glada när du ställer in ett möte?” February 2014: http://www.linusjonkman.com/?p=4262

4.6 Hypotheses

To help us answer our research question "*Why do employees of the different personality types extraversion and introversion perceive work-related stress differently in the consultancy business?"* and *"Do employees of these personality types have a different need for recovery?"* we have with help from the personality traits theories, transactional stress theories and recovery theories developed hypotheses that will give us a deeper understanding of our topic.

The Relationship between the Level of Extraversion and Work-related Stress in the Consultancy Business:

We know that the consultancy business is often characterised by high tempo, long hours, open office spaces and group work. These characteristics seem to fit people of the personality type extraversion better than those of the personality type introversion. Therefore we hypothesise the following:

> **H1**: Introverts experience more work-related stress than extraverts in the consultancy business.

The Relationship between Personality Traits and Demand at Work in the Consultancy Business: Considering theories about job demands and what we know about extraverts and introverts we assume that introverts will experience more stress than extraverts in the consultancy business, due to high job demands that include much social interactions with both clients and colleagues. We also assume that introverts do not need as many breaks as extraverts since we know that introverts are more sensitive to interruptions than extraverts. We therefore conduct our following hypotheses as:

> **H2**: Extraverts feel they have a lower degree of job demands than introverts in the consultancy business.
>
> **H2a**: The correlation between high job demands and WRS is moderated in such a way that the correlation is stronger for lower levels of extraversion.

H2b: Introverts will feel they have sufficient breaks to a higher degree than extraverts in the consultancy business.

The Relationship between Personality Traits and Job Control at Work in the Consultancy Business: Having too much or too little control at work can cause stress (Neufeld & Paterson, 1989). Since introverts presumably work well in sequence and more slowly, the consultancy business with its fast work pace can cause many introverts to lose their control in a work situation. Since extraverts perform better under pressure than introverts (Corina, 2007) we believe that a lack of job control may lead to higher stress levels amongst introverts than extraverts. Our assumption is:

H3: Extraverts feel they have a higher degree of control at work than introverts in the consultancy business.

H3a: The correlation between lack of control at work and WRS is moderated in such a way that the correlation is stronger for lower levels of extraversion.

The Relationship between Personality Traits and Social Support at Work in the Consultancy Business: We assume that extraverts will likely surround themselves with colleagues at work and are more straightforward to ask for help from their colleague than introverts. Hence extraverts will experience that they have a higher degree of social support than introverts. We also assume that introverts are more reluctant to ask for help from their colleagues but when they do get support it will benefit them more than extraverts. Our hypotheses are therefore:

H4: Extraverts feel they have a higher degree of social support at work than introverts in the consultancy business.

H4a: The correlation between social support at work and WRS is moderated in such a way that the correlation is stronger for lower levels of extraversion.

The Relationship between Need for Recovery after Work and Personality Traits in the Consultancy Business:

Introverts have a preference for privacy and intense focus and they prefer undisturbed work. Because of the intense social pressure in the consultancy business we hypothesise the following:

> **H5**: Introverts have a greater need for recovery after a workday than extraverts in the consultancy business.

4.7 Theoretical gap

We find that the existing literature in the matter of understanding stress, personality traits and recovery is inadequate since the existing literatures do not sufficiently integrate different aspects in order to answer our research question.

Many of the existing stress models have fruitful frameworks but they do not have a good balance, they are either too complex and broad, or too simplistic and narrow in their theoretical contribution (Mark & Smith, 2008). Furthermore many stress theories do not take into account the role of individual differences (Mark & Smith, 2008). The majority of existing literatures in stress disregard the context of the individual aspect or lack to connect it in a wider perspective. Only a few models have individual difference factors integrated such as Cox et al. (2000). To clarify the effects in predicting stress, Parkes (1994) advocates that it is necessary to produce research that include individual differences.

Searching for literature about the phenomenon extraverts and introverts one will surely encounter the majority of it in popular literatures. However, when it comes to the academic world there are very few studies about this subject connecting it to stress. Of the academic literature that exists, most is concentrated around self-help, where the focus is on how to convert introverts into becoming/master the personality of an extravert. As we mentioned in the introduction there is a misconception about introversion in the society and therefore it is highly interesting to investigate more about this subject in order to get a deeper understanding of the phenomenon connecting to stress. One benefit from psychological research is that personality traits can

provide the possibility to predict outcomes, e.g. the relationship about personality traits and job performance that is relevant for many organisations. Here we see a gap in the psychological literature regarding the extended study of personality traits (level of extraversion) connecting to stress.

Finally, regarding theories about recovery there is also a lack of interaction between experience and contextual factors where the impacts on experience have been ignored under different situations. Researchers agree that contextual factors as personal differences are not taken enough into account (Sonnentag & Fritz, 2007).

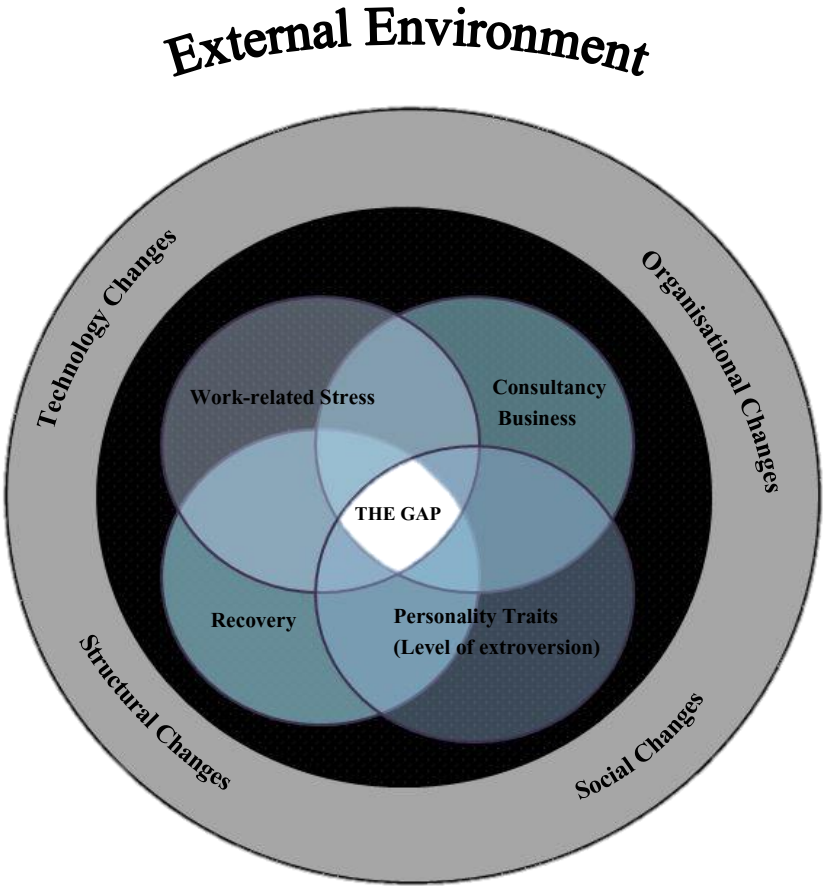


Figure 1- Theoretical Gap

We want to fill the identified theoretical gap by integrating the context of individual aspects from theories of introverts and extroverts, with transactional stress theories, in order to get a wider perspective. We also incorporate the aspects of recovery to get a deeper understanding of the phenomenon stress (see Fig 1).

4.8 Theoretical framework

Our framework (see figure 2) is a synthesised coherence of the existing literature (Locke & Golden-Biddle, 1997), as we have found connections between theoretical fields that generally are not connected and our aim is now to provide a theoretical connection. There is a common underlying theme regarding the emphasis of the individual aspects in the existing theories that we consider not been very well connected. In order to understand the causes of job demands, stress, and coping the authors Briner et al. (2004) pinpoint how vital it is to include the individual's context and behaviour in research. Hence Cox et al. (2000) highlighted that the individual's ability to cope with demands depends on individual context and that control and support will affect the level of stress and we therefore want to link the personality traits of introverts and extroverts with Cox et al.'s personality hazards (job demands, job control and social support variables) and integrate these with the existing recovery theories.

In our research we have addressed this framework specifically to the consultancy business but this framework could be applied onto other professions in order to understand the phenomenon of work-related stress.

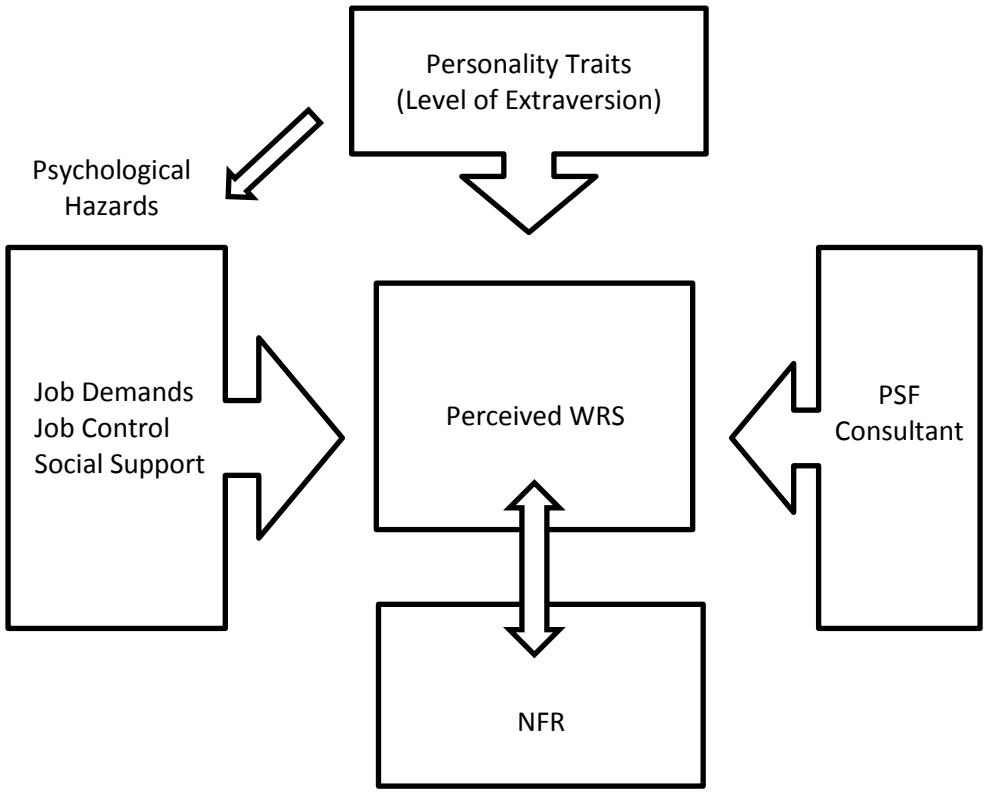


Figure 2 - The Theoretical Framework

5. Methodology

"Science, my boy, is made up of mistakes, but they are mistakes which it is useful to make, because they lead little by little to the truth."

Jules Verne, Journey to the Center of the Earth

5.1 The Scientific Approach

In this study we aim to combine different scientific areas; WRS, NFR and personality traits, in the context of the consultancy business. Because of the solid base of existing research regarding personality, stress and recovery, theory can be considered mature (Edmondson & McManus, 2007). Mature theories make it possible to use existing theory to create hypotheses/make predictions to test empirically.

5.2 The Research Design

We started with an exploratory approach of literature investigation by looking through literature in the areas of stress and personality (psychology) in order to understand existing research in those fields.

Deductive Approach

The research approach we have used is deductive (compared to an inductive approach where data is first collected and patterns identified and related to existing theory) (Bryman & Bell, 2011). Instead we have generated hypotheses based on theories about WRS, NFR and personality traits (extraversion and introversion). These have then been tested through quantitative empirical data.

Quantitative Method

The quantitative data collection was chosen in accordance to methodological fit between data collection and theory maturity as explained by Edmondson & McManus (2007). The purpose of using a quantitative method is to explain specific areas of the research and to examine the relationship between these (Anderson, 1998; Bryman, 1992), in contrary to a qualitative method where the purpose is to explore and understand the overall picture and dimensions of a research area. Our study has a cross-sectional design where the data collected

from our population was from a specific point in time and our aim is to compare different personality types through a correlation study (Creswell, 2009).

Data Collection

Two common ways to collect quantitative data is by experiment or by questionnaire (Creswell, 2009). Looking at the nature of previous studies in our research field, the primary data source was conducted by questionnaire. Since we want to test our hypotheses in order to study the trend/behaviour of a population sample, a questionnaire is to be preferred before an experiment. Our questionnaire was launched online between 27th March and 30th April 2015 to different consultancy businesses in Sweden.

5.2.1 Questionnaire Design

Since we have several scientifically approved questionnaires within the areas of stress, personality traits and recovery we tailored our questionnaire to collect easily codified and comparable data. The questionnaire is based on three pillars (personality traits, stress and recovery) from four existing approved scientific questionnaires (NEO-PI-R, HSE, PSS and NRF). The NEO-PI-R scale measures the individual's level of extraversion. The HSE questionnaire measures WRS and psychological hazards (demand, control, manager support and peer support) and general work-related stress (WRS-I). The PSS questionnaire measures general perception of stress in an individual's life. The NFR questionnaire measures the need for recovery. The reason we had two stress measurements was in order to make sure that our study captures the stress dimension. WRS-I consists of three questions asking specifically about WRS while PSS is a firmly established measurement of stress overall. The NEO-PI-R and the PSS questionnaires exist in a validated Swedish version but we had to translate the other questionnaires into Swedish. In order to make the translation more valid we did a back translation (Beaton et al., 2000). We took help from Swedish friends that were native English speaking and did the translation from English to Swedish and then back to English again. We then verified that the result was close to the original text and could conclude that our translation is valid.

NEO-PI-R

In 1989 Costa and McCrae developed the NEO Personality Inventory (NEO-PI) consisting of 180 scale items. The revised NEO Personality Inventory (NEO-PI-R), consists of 240 scale items, and NEO Five-Factor Inventory (NEO-FFI) consists of 60 scale items. The questionnaire has five subscales that aim to measure the five personality traits in the five factor model (neuroticism, extraversion, openness to experience, agreeableness and conscientiousness) (Costa and McCrae's, 1989; 1992). The NEO-PI-R version is the most comprehensive, and perhaps the most validated (Young & Schinka, 2001). Kurtz & Parrish (2001) showed in their study that NEO-PI-R had a reliability with yielded Cronbach alpha coefficients of $\alpha = 0.91$ to 0.93. The questionnaire is distributed by Hogrefe[19] in Sweden and is not public material (we are therefore not allowed to present the questionnaire in our appendix). It is possible (and accepted) to use the different subscales measuring different personality traits separately since they measure completely different and not correlating personality traits (Bergman, 2003). The NEO-PI-R subscale for Extraversion consists of 48 items (measured on a 5 degree scale), which we have used in our questionnaire. The NEO-PI-R measures the dimension extraversion on a scale showing the degree of extraversion of an individual, rather than positioning an individual as either extravert or introvert.

HSE

In 2004 the UK Health and Safety Executive introduced an indication tool to measure WRS in a more practical way. The design of the tool is suited for making comparisons between, as well as within organisations, and at an individual level. The HSE indication tool is based around a set of Management Standards that help employers, employees and their representatives manage the issue of WRS (Edwards et al., 2008). There are six set of conditions in the Management Standards; Demand, Control, Support, Relationships, Role, and Change where support is divided into the two subsets Manager Support and Peer Support. There are several studies showing the reliability and validity of this tool, and its different parts (e.g. Edwards et al., 2008; Edwards & Webster, 2012) where the yielded Cronbach's alpha has been between $\alpha = 0.78$ and $\alpha = 0.89$. The questionnaire consists of 35 items (measured on a 5 degree scale) but we have chosen

[19] Distributor (in Europe) of psychological tests: http://www.hogrefe.se/

the ones measuring Demand, Control, Manager Support and Peer Support. We have also included a subset of three scale items measuring WRS-I. The questions are presented in Appendix 2.

PSS

The Perceived Stress Scale was developed by Cohen et al. (1983) and is considered the most widely used instrument for measuring the perception of stress (Lee, 2012). The PSS measures the perceived stress level the respondent have in her/his life (Cohen et al., 1983). The PSS exist in three versions: 14 items (PSS-14), 10 items (PSS-10) and 4 items (PSS-4), measured on a 5 degree scale. We have used PSS-10 in our questionnaire. Lee (2012) claims that the PSS-10 psychometric properties are superior to the PSS-14. He states "Therefore, it is recommended that the PSS-10 be used to measure perceived stress, both in practice and research" (Lee, p. 126). The PSS-10 Cronbach's alpha was found to be higher than $\alpha = > 0.7$ in several studies that have been conducted (Lee, 2012). See questions in Appendix 3.

NFR

To examine the need to recuperate from work fatigue the concept "need for recovery" was created. NFR was developed from the effort-recuperation model by Meijman (1989). Veldhoven & Meijman developed a questionnaire to measure WRS and psychosocial job conditions in 1992-1994, the "Questionnaire on Experience and Evaluation of Work" (Dutch abbreviation: VBBA). NFR is characterised by irritability, feelings of overload, social withdrawal, reduced performance and lack of energy. The questionnaire in total consists of 27 scale items. In the VBBA questionnaire there are 11 scale items to measure the need for recovery. In our questionnaire we have used the NFR questionnaire with 11 items (measured on a 5 degree scale). Veldhoven & Broersen (2003) state: "The need for recovery scale is a short, simple, but adequate measure for early symptoms of fatigue at work, for use in both health surveillance and scientific research, at the individual, departmental, organisational, or national level" (Veldhoven & Broersen, p. 8). Several studies have tested and measured this scale for validity and found the reliability ranging between Cronbach Alpha; $\alpha = 0.81$ to 0.92 (Veldhoven & Broersen, 2003). See questions in Appendix 4.

The Characteristics and Structure of our Final Questionnaire

The complete questionnaire was produced digitally in the online survey program Qualtrics. The respondents were provided general information about the purpose of the questionnaire and guaranteed anonymity (see Appendix 1). The structure of the questionnaire was as follow:

- Question about work role (in order to ensure that all respondents were consultants)
- 48 scale items of NEO-PI-R about extraversion
- HSE indication tool of 26 scale items
- Perceived stress from PSS of10 scale items
- NFR of 11 scale items
- Questions about how long the respondent has worked in total as a consultant, and the maximum number of work hours they spend at work (per week)
- Demographical questions like gender, age, marital status and educational level

We chose this structure for the questionnaire purposely. Dahmström (2011) states that you want questions of the same type gathered together, and to avoid the mixing of negative and positive statements. We could only choose the order of the different questionnaires but kept the order of each scale item as previously used. We chose to keep a relatively small number of statements on each page of the questionnaire so that the respondent would not feel too overwhelmed by the number of questions. In the questionnaire the respondent could track their progress of the questionnaire through a bar showing how much of the questionnaire they had completed (in percent).

Usually one wants to start with the neutral and safe questions in order for the respondent to be nicely led into more difficult questions (Dahmström, 2011). In our case we considered the questions about personality more neutral since they are concerned with what the individual prefer and like in life and might therefore be easier to answer. The questions about stress concern how they feel about different aspects of their work and life and might be considered more difficult and “loaded”. We concluded the questionnaire with demographic questions in order to mark the ending of the questionnaire, with the hope that the respondents that had gotten so far would likely finish it.

5.2.2 The Targeted Group of Respondents

The target group for our research were consultants in professional service firms. The reason behind our choice of this target group is due to the characteristics of their profession as mentioned previously. We did not narrow the target group down to a specific type of consultants like management consultants. The reason was in part because we could not get a sufficiently large sample of one type of consultants (in the scope of this study), but we also felt that there are many common elements for consultants in PSF (as previously noted in the Literature Review). We did restrict our data collection to the Swedish market.

A general rule for a sample size is to have a minimum of 100 respondents (Jacobsen, 2002) and this was our aim. Our total number of respondents ended at 128, but in order to ensure validity in our results we first removed incomplete answers giving us 106 complete responses. We also verified that we only had consultants that had answered the questionnaire and found that two respondents were not. These were also removed, giving us a total of 104 complete responses.

In order to reach our target group we did a convenience sample and looked up consultancy businesses in Sweden and contacted them through email or phone. Those that wanted to participate in our study received information about our study to forward to their employees together with the questionnaire link. The information provided was the same as in our questionnaire introduction as seen in appendix 1.

Restriction of range

The correlation between two variables depends on the range of possible values the measured variables can assume. If one variable or the other is sampled over too narrow a range it can make correlation look weaker or stronger than it is in reality (Zimmerman & Williams, 2000). We know that in reality the level of extraversion is normally distributed (Bergman, 2003) and if we were to only target one type of consultants we might have had a sample with e.g. respondents of too high (or too low) level of extraversion giving us a skewed view of reality. By targeting different types of consultants our aim was to avoid the restriction of range in data (Zimmerman & Williams, 2000).

5.3 Critical Review of Methodological

In the sections below we will discuss the validity and reliability of our methodology.

5.3.1 Validity - the Experiment's Validity and Relevance

The validity shows whether we really test what we are intended to (Bryman, 2011). *Internal validity* refers to the direction and causality of a relationship. In a correlation study it is not possible to conclude causality, only look for correlations. Since we measure the level of extraversion on a scale we do not wish to manipulate the variable by dividing it into different parts (e.g. a low level corresponding to being an introvert and a high to being an extravert). This would not be statistically correct. Because of the characteristics of a correlation study (not being able to conclude causality) it has a lower internal validity than if we were to conduct an experimental study (Bryman, 2011). In our case, since the level of extraversion is biologically ingrained and stable over time (Soldz & Vaillant, 1999; Goldberg, 1981) we can rule out reversed causality. We will be able to suggest that it is more reasonable that the level of extraversion affects stress (or demand, control, social support, NFR) than the other way around. However, there is always the possibility that the correlation between the variables is caused by some other factor: There might, for example, be a third, unknown variable which affects both extraversion and stress. This possibility can never be ruled out in correlation studies.

External validity refers to how generalizable the results of a study are, and whether they can be transferable (Bryman, 2011). Since we investigated a specific group we did our data collection through a convenience sample. A convenience sample is not randomised and therefore less preferable when gathering data; however Bryman & Bell (2011) state that it is acceptable in certain cases and fairly commonly used in the research area of business and management. A random sample would refine our research method but due to the nature of our study where we specifically target consultants it would be impractical (and impossible in the scope of this study) to conduct a data collection through random sampling. Another limitation is the size of our sample, 100 might be a good guideline but depending on the population size a larger sample would be preferable and likely generate results more generalizable.

Construct validity is the degree to which a test measures what it claims to be measuring (Cronbach & Meehl, 1955). The construct validity of our study is reliable since the questionnaire is based on tested and approved questionnaires from earlier research.

Face validity, concerns whether the respondents subjectively perceive that the study measure what it intends to do (Taylor & Bogdan, 1984). In order to secure this we wanted the respondent to understand the aim of the study and the meaning of each question. Parts of our questionnaire had to be translated into Swedish, and to ensure good face validity we did a back translation (see part 5.2.1 above) in order to secure the best possible translation. We did several improvements until the new translation would have a natural flow in Swedish without losing the core meaning of the original text. The questionnaire was then tested amongst friends to see if they understood the questionnaire correctly.

5.3.2 Reliability

Reliability concerns the outcome of a study, and whether it will produce the same results under similar conditions (Jacobsen, 2002). The evaluation of reliability depends on the possibility of repeatability and quality of internal consistency (Bryman, 2011). The repeatability of our questionnaire would be considered high since we have used previously tested and validated questionnaires as a foundation.

Internal consistency is concerned with how much the results differ from reality (Bryman, 2011). Since all scales used in our survey are previously used and validated we believe we can rely on those results. But since we have done our own translations of the HSE and NFR scales we want to make sure that they are reliable. We tested the observed items with Cronbach's Alpha (Cronbach, 1951; Reynaldo & Santos 1999). Nunnaly & Bernstein (1994) state, that a Cronbach's Alpha with a minimum of 0.7 is acceptable for a newly developed scale. Lance et al. (2006) further states that a value of 0.8 should be required in basic research. Our values can be seen in Table 3. All values are above 0.8 apart from the one for WRS-I, it has a value just below at 0.796, which can be explained by the smaller number of items in this index (Cortina, 1993). This supports that all our scales are reliable, despite our translation from English to Swedish.

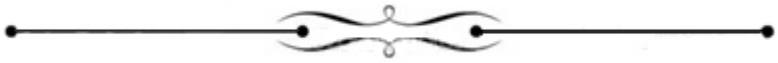
	Cronbach's Alpha
WRS-I	0.796
PSS-I	0.897
Demand	0.848
Control	0.863
Manager Support	0.836
Peer Support	0.819
Social support	0.892
NFR	0.899

Table 3- Reliability analysis

5.3.3 Confidentiality

All respondents were informed beforehand that it was voluntary to participate in the questionnaire, that the results were only to be used in this study and that all respondents were anonymous. We had in our data collection tool no possibility of identifying a specific respondent. Offering respondents anonymity is a good way to secure honest answers (Bryman, 2011), especially when we ask questions that might be considered sensitive (Dahmström, 2011).

6. Data



”Errors using inadequate data are much less than those using no data at all.”

Charles Babbage

6.1 Data Quality

In order to analyse our data we used Excel and the statistics program SPSS. We did tests to ensure quality of data, checking for normal distributions and possible outliers as well as taking into account reverse statements. We also removed incomplete and irrelevant responses (as described in part 5.2.2 above). We had two variables with some reversed items that we needed to recalculate in preparation for analysis. The variable for level of extraversion was calculated in accordance to a NEO-PI-R manual (Bergman, 2003) and values transformed from our raw data into so called T-points, which also takes gender into account. A high value for this variable shows a high level of extraversion and vice versa. The variable PSS-I was also calculated similarly in accordance to a standard, contributing low values to reversed items and high values to the rest. A high value for the variable PSS-I show a high level of stress and vice versa. The variables for Demand, Control, Social support (also Manager support and Peer support) and NFR shows the same characteristics, e.g. a high value for the variable Control correspond to an individual feeling a higher degree of control in their work.

6.2 Level of Significance

In our data analysis we put the significance level at $p<0.05$. A significance level of $p<0.05$ implies that we run a risk of 5 percent of being wrong in our prediction and that a value shows randomly. This is standard statistical practise since we otherwise cannot make any inferences from our results (Newbold et al., 2009).

6.3 Test for Normality

The level of extraversion should, according to previous research, be normally distributed. We have therefore conducted a test of normality using Shapiro-Wilk (as presented by Shapiro & Wilk, 1965 and recommended by Razali & Wah, 2011) in SPSS to test the null hypothesis that our sample is normally distributed. For the variable level of extraversion we have looked both at our raw data as well as the data transferred to T-points

and none significantly differ (significance levels are 0.113 and 0.097 respectively) from a normal distribution. The only other variables that are normally distributed are PSS-I and Social support. All other variables are with a Shapiro-Wilk test shown to significantly differ from a normal distribution. See Table 4 for numbers. We did attempt to logarithm the variables in order to get a normal distribution but it did not work. This limits the options of what statistical tests we can perform on our data, but tests for e.g. correlations can still be performed, using a non-parametric measure.

	Statistic	Degrees of Freedom	Sig.
Level of Extraversion	.979	104	.097
WRS-I	.960	104	.003
PSS-I	.981	104	.134
Demand	.975	104	.043
Control	.967	104	.011
Manager Support	.974	104	.042
Peer Support	.967	104	.010
Social support	.977	104	.067
NFR	.946	104	.000

Table 4 - Test of Normality - Shapiro-Wilk

6.4 Predictor and Criterion variables

Because of the nature of our study (correlation), we cannot with certainty say that one variable affect the other. Because of this we do not talk about dependent or independent variables but rather about predictor and criterion variables. In this study our predictor variable is level of extraversion, while the corresponding criterion variables are the variables for stress, job demands, job control, social support and NFR. Looking at regression analysis the variables for stress, job demands, job control, social support and NFR would be considered predictor variables.

6.5 Analysis in SPSS

Since we have continuous/scale variables we cannot perform tests that compare means, but rather have to focus on tests that measure the relationship between our variables. We have primarily used tests for correlation in SPSS since we are interested to see what relationships we have between our different variables. We have used Spearman's rank correlation, which is recommended as a non-parametric test for data that is not normally distributed, and when data is ordinal as when measured on a Likert scale (in our case on a 5 degree scale) and thus not parametric (Hauke & Kossowski, 2011). We will present the results from Spearman's rank correlation but want to note that we did get approximately the same results when conducting a Pearson correlation. A correlation only shows a relation between variables, and usually we cannot draw conclusions about causality (Newbold et al, 1995). In this case though we make predictions about a variable that is biological and heritable, and also very stable (the level of extraversion) and thus we can say that it is the level of extraversion being the decisive variable rather than the other way around. In psychological research we can use Cohen's (1988) conventions to interpret effect size. He states that a correlation coefficient of 0.10 should be thought of as weak, around 0.3 as moderate, and above 0.5 as strong. We are a bit more restrictive and consider correlations below 0.3 as low as shown by Clark-Carter, D. (2010).

Regression analysis is used when we want to explain one (criterion) variable by means of other (predictor) variables (Newbold et al., 2009). It is conducted when we have an idea of causality and direction of a relationship. In this study we have hypotheses where we want to test whether the relationship between e.g. demand, control and social support with WRS-I/PSS-I is moderated by the level of extraversion. In other words, does the relationship between demand/control/social support and stress differ depending on the level of extraversion? See Figure 3.

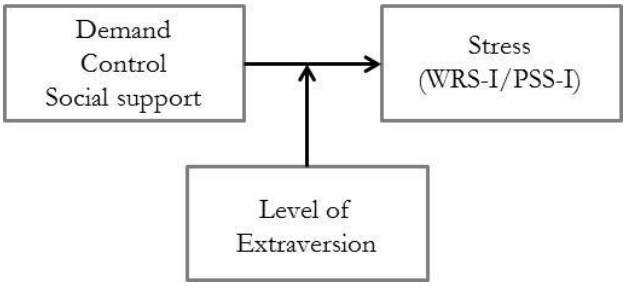


Figure 3 – The Moderating Effect

In order to find out we have conducted linear regression analysis looking for interaction effects, despite the fact that many of our variables are not normally distributed. There seem to be much discussion about using regression analysis under these conditions and there is support for both sides, but many agree that in cases where a sample is big enough (100 seem to be a reasonable threshold) regression can be conducted but needs to be carefully analysed (Lumley et al., 2002) Also, we got approximately the same results for correlations using Pearson, which indicates that it is feasible to do tests for regression on this data. Linear regression is conducted according to standard practise in SPSS, in our case with stress (WRS-I/PSS-I) as a criterion variable and level of extraversion together with, job demands, control or social support as predictor variables. If these show statistically significant coefficients we can conduct a test for interaction effects. Specific interaction variables are then created by multiplying the variable for level of extraversion with the variables for job demands, control, and social support separately (example level of extraversion*demand). This interaction variable is then brought into the regression analysis as a criterion variable together with the subsequent variable for demand, control or social support and the variable for level of extraversion. If there is an interaction effect we will see a significant value for the coefficient of the interaction variable as well as a higher R square value, better explaining the variation in the predictor variable. In this analysis we have to interpret coefficients differently from a standard linear regression. When adding an interaction variable our included criterion variables will depend on each other. The coefficients for job demands, job control or social support will show the expected impact on stress when the level of extraversion is 0, and the other way around.

6.6 WRS-I and PSS-I

Our two measures of stress (WRS-I and PSS-I) seem to show approximately the same result. There is a clear relationship between them; they correlate significantly and quite strongly at positive 0.567. This proves that our measurements test partly, but not exactly the same thing, justifying the relevance of using both measurements.

6.7 Our Respondents: Dedicated and Hard Working Consultants with High Educational Background

Since we have collected answers from different kinds of consultants it is interesting to see how the sample looks like with regards to demographics (see figures in Appendix 5). We see that our respondents work with different types of consulting. The majority (39%) are management consultants, IT consultants (24%) and accountants (14%). There were also other kinds of consultants (24%), e.g. within HR, engineering, market research, recruitment etc. The sample shows that these consultants work long hours in their peak season, as many as 45% work more than 50 hours a week. They have also worked as consultants for quite some time; most (58%) has worked as consultants for over 5 years and 35% for more than 11 years. It is therefore only natural that many (57%) are above 40 years of age (13% are below 30, 30% between 30 and 39) and lives in relationships (83%) with children (56%). There are 53% women and 47% men in the sample and the respondents are highly educated with over 70% having a college or university degree of more than 3 years. These results show a picture of our respondents as; hard working and dedicated knowledge workers with high education. This is in line with previously presented characteristics of the consultancy business.

6.8 The Level of Stress Among our Respondents

The level of perceived stress is at first sight not that high (see Table 5). The WRS-I has a mean score of 3.34 and PSS-I has a mean score of 20.42 (the range is 13 to 28). But looking at the percentiles we can see that only 25 percent of respondents have responded below 3 and 18 on respective scale. Comparing the results with a report from HSE (2007) and Cohen et al (1983) we find that the results in fact show a high level of stress. Comparing the results with HSE (2007) and the 3 questions measuring WRS-I, we find that our respondents are slightly less stressed than in their study (comparing results with high educated respondents). Comparing the results of Demand, Control and Social support we find that Demand is higher (HSE: 2.61), Control slightly lower (HSE: 3.75), and Manager and Peer support lower (HSE: 2.94 & 3.40). For PSS-I scores of 20 or higher are considered high. NFR has a mean value of 2.97, and it seems that the need is not that high, since the levels of stress are not extremely high this could be reasonable.

	N	Mean	Min	Max	Std. Dev.	Per-centile 25%	Median	Per-centile 75%
Level of Extraversion	104	52.28	20.00	78.00	13.47	44.00	52.50	62.75
WRS-I	104	3.34	1.33	4.67	0.75	3.00	3.33	4.00
PSS-I	104	20.42	13.00	28.00	3.33	18.00	20.00	23.00
Demand	104	3.04	1.75	4.63	0.60	2.63	3.00	3.50
Control	104	3.63	2.00	4.83	0.68	3.00	3.67	4.17
Manager support	104	3.56	1.40	5.00	0.77	3.00	3.50	4.15
Peer support	104	3.86	1.75	5.00	0.73	3.25	3.75	4.50
Social support	104	3.69	1.78	5.00	0.70	3.22	3.56	4.22
NFR	104	2.97	1.18	4.82	0.98	2.09	2.91	3.89

Table 5 – Descriptive for Variables

7. Results

"You may never know what results come of your actions, but if you do nothing, there will be no results."

Mahatma Gandhi

7.1 Do Introverts Experience a Higher Level of WRS than Extraverts in the Consultancy Business?

As we have explained previously we expect introverts to experience more stress than extraverts in the consultancy business. Looking at our correlations (see Table 6) we find that the level of extraversion showed a significant negative correlation with WRS-I (r_s=-.241; p<.05) and PSS-I (r_s=-.453; p<.01). The correlation with WRS-I can be considered weak but the correlation with PSS-I can be considered moderate/strong (Cohen, 1988). Since PSS-I correlate quite strongly with WRS-I, and indexes for demand, control and social support we believe that it can be said to exhibit some aspects of WRS. We can therefore partially accept our H1 (see Table 7).

Correlations

Spearman's rho			Level of Extraversion	WRS-I	PSS-I	Demand	Control	Manager Support	Peer Support	Social Support
N=104	WRS-I	Corr. Coeff.	-,241*							
		Sig. (2-tailed)	,014							
		R squared	0,058							
	PSS-I	Corr. Coeff.	-,453**	,571**						
		Sig. (2-tailed)	,000	,000						
		R squared	0,205	0,326						
	Demand	Corr. Coeff.	-,242*	,779**	,585**					
		Sig. (2-tailed)	,013	,000	,000					
		R squared	0,059	0,607	0,342					
	Control	Corr. Coeff.	,486**	-,400**	-,488**	-,439**				
		Sig. (2-tailed)	,000	,000	,000	,000				
		R squared	0,236	0,160	0,238	0,193				
	Manager Support	Corr. Coeff.	,445**	-,168	-,315**	-,253**	,574**			
		Sig. (2-tailed)	,000	,088	,001	,010	,000			
		R squared	0,198	0,028	0,099	0,064	0,329			
	Peer Support	Corr. Coeff.	,466**	-,316**	-,422**	-,446**	,534**	,751**		
		Sig. (2-tailed)	,000	,001	,000	,000	,000	,000		
		R squared	0,217	0,100	0,178	0,199	0,285	0,564		
	Social Support	Corr. Coeff.	,478**	-,234*	-,363**	-,332**	,582**	,951**	,902**	
		Sig. (2-tailed)	,000	,017	,000	,001	,000	,000	,000	
		R squared	0,228	0,055	0,132	0,110	0,339	0,904	0,814	
	NFR	Corr. Coeff.	-,468**	,676**	,776**	,656**	-,586**	-,355**	-,487**	-,416**
		Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000
		R squared	0,219	0,457	0,602	0,430	0,343	0,126	0,237	0,173

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 6- Correlations

7.2 The Relationship with Job Demand

Job demands showed a significant positive correlation with WRS-I (r_s=.779; p<.01) and PSS-I (r_s=.585; p<.01). It also showed a significant negative correlation with the level of extraversion (r_s=-.242; p<.05). This is very weak and indicates that a higher level of extraversion will not moderate the correlation between job demands and WRS. If we then add the level of extraversion and our interaction variable to the regression model (See Appendix 6) we find that to be true and we get no significant interaction effect, with either WRS-I (Adjusted R^2=.558, B=-.006, p_B>.05) or PSS-I (Adjusted R^2=.452, B=-.040, p_B>.05) as the criterion variable. We will thus reject H2. What we do find is that the level of extraversion shows a significant negative and moderate correlation with the perception of being able to take sufficient breaks (r_s=.420; p<.010) giving support to hypothesis H2a.

7.3 The Relationship with Control

Control at work showed a significant negative correlation with both WRS-I (r_s=-.400; p<.01) and PSS-I (r_s= -.488; p<.01), but a significant positive correlation with level of extraversion (r_s=.486; p<.01). Because the correlation can be considered moderate/strong it indicates that a higher level of extraversion will result in a higher level of perceived control (we can accept H3), and since we know of the relationship between control and WRS-I and PSS-I we look for a possible interaction effect. We get the same result that we got in the previous analysis; no significant effect for the interaction variable for either WRS-I (Adjusted R^2=.16, B=.002, p_B>.05) or PSS-I (Adjusted R^2=.286, B=.022, p_B>.05). We will therefore reject H3a.

7.4 The Relationship with Social Support

Manager support showed no correlation with WRS-I (r_s=-.168; p>.05) but a significant negative correlation with (r_s=-.315; p<.01). Peer support showed a significant negative correlation with both (r_s=-.316; p<.01 and r_s=-.422; p<.01 respectively). Social support shows a significant negative correlation with WRS-I (r_s=-.234; p<.05) and with PSS-I (r_s=-.363; p<.01). Level of extraversion showed significant positive correlation with both manager support (r_s=.445; p<.01) and peer support (r_s=.466; p<.01). It shows the same correlation with social support (r_s=.478; p<.01). The relationship is moderate/strong and thus giving us an indication that people with a higher level of extraversion feel they have a higher degree of social support and we can accept H4. We see no interaction effects for extraversion on social support and WRS-I (Adjusted R^2=.08, B=.009, p_B>.05) or PSS-I (Adjusted R^2=.228, B=.004, p_B>.05) and will reject H4a.

7.5 The Perceived Difference in NFR

The level of extraversion showed a significant negative correlation with NFR (r_s=-.468; p<.01), a moderate/strong correlation, which also suggest that introverts have a higher need for recovery than extraverts in the consultancy business. We therefore accept H5.

Hypothesis	Outcome
H1: Introverts experience more work-related stress than extraverts in the consultancy business.	✓ Accepted
H2: Extraverts feel they have a lower degree of job demands than introverts in the consultancy business.	Rejected
H2a: The correlation between high job demands and WRS is moderated by a higher level of extraversion.	Rejected
H2b: Introverts will feel they have sufficient breaks to a higher degree than extraverts in the consultancy business.	✓ Accepted
H3: Extraverts feel they have a higher degree of control at work than introverts in the consultancy business.	✓ Accepted
H3a: The correlation between lack of control at work and WRS is moderated by a higher level of extraversion.	Rejected
H4: Extraverts feel they have a higher degree of social support at work than introverts in the consultancy business.	✓ Accepted
H4a: The correlation between social support at work and WRS is moderated by a higher level of extraversion.	Rejected
H5: Introverts have a greater need for recovery after a workday than extraverts in the consultancy business.	✓ Accepted

Table 7 - Outcome of Hypotheses

8. Discussion

"It seems that we have it backward in our society. We tend to look up to people who are under a great deal of stress."

"Don't Sweat the Small Stuff"

We find that we have many predicted relationships between our variables and especially between the level of extraversion and predictors for WRS (demand, control and social support). We also have support to believe that NFR is affected by personality type.

8.1 WRS-I versus PSS-I

Since the correlation with WRS-I is weak we cannot draw any conclusions about a relationship between the two. But the negative correlation between the level of extraversion and PSS-I is strong enough to suggest that an increase in the level of extraversion would result in a decrease in the level of PSS-I. We find it interesting that we see a relationship between the level of extraversion with PSS-I but none with WRS-I, especially since we know that there is a quite strong relationship between PSS-I and WRS-I. We also know that job control and social support has a stronger relationship with PSS-I than WRS-I.

One possible reason can be that PSS-I captures a nuance of stress that introverts can feel more related to than with the stress questions from WRS-I. By looking at the PSS-I items in the questionnaire the questions have bigger emphasis on work control whereas WRS-I includes more generic questions about stress (see Appendix 2 and 3) hence the outcome of the result will show a bigger difference between introverts and extraverts regarding their perceived stress when using PSS-I.

Another more likely reason is that PSS-I is a better gauge to measure stress; it is more commonly used and consists of more scale items that could give better nuance to the concept of stress. WRS-I has a lower value of Cronbach's Alpha than PSS-I ($\alpha = 0.796$ versus $\alpha = 0.897$), showing that WRS-I has a lower internal consistency. Low inconsistency is often the reason behind vague relationships between variables. However even though WRS-I has a lower Cronbach Alpha than PSS-I the value is still above the accepted value 0.7.

In our case there was no relationship between WRS-I and manager support and only a weak one with level of extraversion and peer and social support. But it did have a strong correlation with job demand. This may be due to the fact that high job demand is one of the strongest WRS hazards and since PSS-I captures some other aspects of stress the high job demand does not come through as strongly in this correlation. Still, since PSS-I correlates quite strongly with the level of extraversion we see this as an indicator that a lower level of extraversion causes higher levels of WRS. Especially since it correlates at least moderately with control and the variables for social support that also are predictors of WRS.

8.2 Introverts Do Seem to Experience more Stress than Extraverts

We have seen that the level of stress in the consultancy business was moderate, and we expected it to be higher since we knew that the consultancy business is known for being a demanding profession with high levels of stress and more burnouts than in other businesses (Berglas, 2006; Jemielniak, 2012). This result can be due to the fact that our questionnaire was voluntary. It is possible that the consultants that were most stressed did not have time to the answer our questionnaire. Many of the consultancy businesses that we contacted replied that they did not have time to participate in our study since they were too busy. They did not want to burden their already very busy employees with additional demands. Still we can see from our results that there is a relationship between lower levels of extraversion (introversion) and perceived WRS. This is natural considering the characteristics of the personality type introversion compared to those of the consultancy business. One could argue that this misfit is the reason behind why introverts feel more stressed than extroverts in this context. Introverts prefer to work in a curtained environment (Block & Stokes, 1989), in sequence and are drained by too much social activity. Working as a consultant means uncertainties and high variation in work tasks (Alvesson, 2004), which does seem to fit extraverts better. We did expect to see stronger effects, especially since the poor fit between the individual and the working environment can be considered so bad. The fact that we do not is a reason to believe that individuals of the personality type introversion is not as sensitive to these factors as can be expected. There are those speculating that introverts are good at “going into the role” of an extravert and if this is the case the introvert might not want to recognize discrepancies to this role. In any case they still are introverted and this role-play should show in

other aspects of their life, e.g. in the NFR. This will also be shown in more detail as we move this discussion forward.

8.3 Introversion Related to Control and Social support

We have found that the level of extraversion correlates with job control and social support but we found no relationship with job demands. We believe that this is reasonable since we study a business that is characterised by high job demands on their employees in general, it is fast moving, and consultants often have to juggle many assignments at the same time and work towards tight deadlines. Because of this, all employees, no matter their personality type would likely feel pressured. This would be logical since there is such a strong correlation between job demands and both PSS-I and WRS-I showing that high job demands and stress are both common in the consultancy business. Also, since introverts seem to have less need for breaks this might help balance the additional job demands they might feel.

We do have results indicating that a lower level of extraversion would result in a feeling of lack of job control and less feeling of social support. This seem reasonable since introverts' are likely to feel less control because of the constant need for quick thinking and reacting, as well as multitasking in the consultancy business. To keep a sense of control and try to work in sequence under these conditions is probably hard. But there is also the fact that all employees within the consultancy business should feel they have some measure of control since it is a flexible type of work where much of the responsibility is put in the hands of experienced workers.

The relationship between level of extraversion and perceived social support is probably even more natural considering an introverts need for alone time and internal focus. They will likely not be as concerned with the social aspects of work. But no matter your personality there will always be a measure of social contact needed at a workplace like a consultancy firm. Also, despite the fact that there is a great need for group work and coordination within the consultancy business, consultants are still highly educated and probably work well on their own. There might even be some prestige involved in the work, which might affect the consultant's willingness to ask for help. Thus, we believe it is logical that the correlation is not higher than it

is. Despite the relationship between the level of extraversion and stress, control and social support we see no moderating effect (where the level of extraversion would affect the relationship between demand/control/social support and WRS). This would imply that the relationship is only as shown in Figure 4.

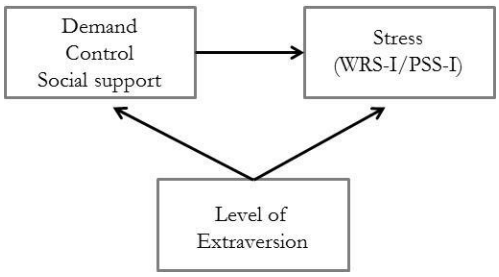


Figure 4 – The seen Relationship between the Variables

The level of extraversion seem to affect control/social support (not demand though as explained above) and it seem to affect stress, but a variation of the level of extraversion will not affect the causal relationship between demand/control/social support and WRS. This raises the question of whether the actual relationship is that the level of extraversion affects the psychological hazard that in turn affects WRS (see Figure 5). It was not in the scope of our study to test this relationship but it could explain the lack of effect we got in our results.

Figure 5 – The Actual Relationship between the Variables?

Furthermore a speculation regarding these results could be connected to Cox et al.'s framework of psychological hazards. Job control and social support is in the category where Cox et al. refer as "Content to Work" while job demands is in the category "Content of Work" (see Table 2). Perhaps the hazards in the "Content to Work" have a stronger relationship with stress (as in our case) since it concerns about how individual at work interact with each other. There is a more psychosocial dimension in the context to work than in the context of work. Let's think of this situation, if job demands (Context to Work) is affecting the level of stress negatively amongst introverts it can be easier prevent. The business can for example reduce the job demands by delegation. However if the stress level where caused by social support (or other hazards from content to work) it is more difficult to manage, as we knew from the introduction, less than 30 percent of managers have implemented tools to deal with psychosocial risks. To not get the support or to feel that one does not have control in form of decision making can be very frustrated. For introverts we see that it creates more stress in the consultancy business than for extraverts. This can explain why we had a stronger relationship of the psychological hazards of job control and job support than job demand.

8.4 Introverts Have a Greater Need for Recovery

Our results showed that introverts seem to have a greater NFR than extraverts. A reason for this could be that the consultancy business characteristics are more suitable for the extraverts. After an intense day with high social stimulus and demanding work task introverts would likely experience a greater NFR. The social dimension of work can affect an introvert more intensively than an extravert (Fink, 2005) and that will also contribute to the NFR. This result is not surprising since we know that introverts find their energy in their inner world and regain energy in solitude and privacy. Our result gives support to Cox et al. (2000) statement about how individuals have different NFR, our result add the extra understanding to the specific personality traits of extraverts and introverts. We know from previous studies that recovery after work is necessary in order to avoid stress and burnout (Sonnentag & Fritz, 2007). If introverts do not get an adequate amount of recovery it can mean that they are more likely to be exposed to stress and burnout in the consultancy business than extroverts. This is consistent with our result for hypothesis H1 where we partially can conclude that introverts experience more WRS than extraverts in the consulting business.

These findings give a deeper knowledge regarding personality types, stress and their need for recovery. We will further discuss our theoretical contribution and practical implications.

8.5 Theoretical contribution

With this study our aim was to contribute with academic research and add to the "knowledge bank". We believe that we have contributed to a more holistic view of stress where we have connected studies about personality traits, WRS and NFR in a highly relevant context. We have extended the field of stress by taking into account individual differences, where we specifically add more knowledge about the individual personality trait Extraversion in the context of the consultancy business. Furthermore we have added some extension to the psychology research within personality traits. The personality trait Extraversion has not before been investigated in the context of WRS, in this detail. We can therefore provide a more comprehensive picture about the differences between extraverts and introverts and how they experience stress in a profession that is very demanding.

Since there are few studies that connect these aspects of stress and personality traits, our findings can provide a more detailed view and help organisations to better understand their employees' different needs. By gaining further understanding of the interaction of personality traits and WRS the organisation can to a higher degree address the fit between the characteristics of the employee's personality and the connection to potential stress hazards.

8.6 Implications

Because of the characteristics and preferences of the consultancy business one would assume that the share of introverts is quite small compared to extraverts. This is not the case and we can see the normal distribution expected in society as a whole. Since there are almost as many individuals with introverted characteristics as extraverted characteristics it is important to understand the characteristics of both in order to give all employees the right working conditions.

There are several implications of this study, the primary being that introverts experience more stress, likely because they have less fit between their personality and their working environment. Management need to take

this into account when giving their employees the right conditions in order for them to do the best job possible. When it comes to stress at the workplace we now see indications that introverts feel less control at work, and that they have less social support. More help tools regarding Context to Work are needed to address the problematic areas around how to deal with stress in a psychosocial context. In order to reduce these factors management needs to step away from the Extravert Ideal, look at each employee separately and consider what would be the best way to go in order for all employees to benefit from the change. One idea could be to actively approach employees that might otherwise not ask for help or, make sure that there are possibilities for the employees to choose their own work setting (maybe through the possibility of working both in closed spaces and open ones).

Furthermore we know that all personality types' benefits from recovery to restore from stress but introverts have a bigger need for recovery after a work day. It is often in the free time that individuals find the time to recover but is it also important that organisations offer a moment to recover. For extraverts, more breaks are more benefit for them as we would see in our results, while introverts do not need as much break as extraverts. By offering more flexibility for each employee to manage their own time it can affect to reduce the perceived feeling of stress. By making sure that employees have the opportunity to recover it can prevent an evil spiral created by stress, as we know that stress is bad for both the company and the employees that are affected.

All employees have their worth, no matter their personality type, and a workplace benefits from the variety of personalities that exist among their employees and therefore need to address the needs of all.

8.7 Limitations

One limitation to our study is the fact that we cannot explain the causality of the relationships we see. We can imply and suggest but not say anything for certain. This is a limitation of our method, but considering the nature and aim of this study it was an appropriate choice.

It is always preferable to be able to compare samples from different groups, and it would have been interesting to compare the consultancy business with one that shows other characteristics, thus giving more nuances to our study and being able to rule off effects that might have risen because of the characteristics of the consultancy business.

8.8 Future research

The sky's the limit when it comes to scientific contributions. From our result we concluded that individuals in the consultancy business with lower level of extraversion experienced a higher degree of stress than individuals with a higher level of extraversion. But we could not prove that the level of extraversion has a moderating effect on the relationship between psychological stress hazards. This lack of effect could be explained by the relationship in Figure 5 and one recommendation for future research is to investigate whether this is the actual relationship. Another suggestion is to further elaborate this study in other settings, e.g. in other professions, or make comparisons between different sizes of organisational firms to see if our statement also are valid in other contexts. Also, one could investigate further by gathering data from one specific workplace, or compare between two workplaces, to study the relationship between, stress, personality types and organisational culture.

By combining both a quantitative and qualitative method one can get an even better picture of this subject in order to explain in more detail how and what is the specific cause that makes introverts experience stress more than extroverts. A deep dive into understanding the different personality types in order to understand why individuals of the personality type extraversion experience less stress than introverts. An exploratory qualitative study might also enhance the findings of this one.

9. Conclusions

"It always seems impossible until it's done."

Nelson Mandela

Research question (s):

Why do employees of the different personality type's extraversion and introversion perceive work-related stress differently in the consultancy business? Do employees of these personality types have a different need for recovery?

Our aim of this study was to give an indication of whether (and why) the level of extraversion of an individual working as a consultant affects their perceived level of WRS. We also wanted to explain if their NFR differs. We did this through a quantitative correlation study attempting to test several hypotheses.

We came to the conclusion that employees with a higher level of extraversion seem to perceive a lower level of stress than those with a lower level of extraversion. We also found that an individual's level of extraversion correlates strongly with psychological stress hazards, like the perceived level of control and social support at work. We found no correlation to the perceived job demands, which might be explained by the characteristics of the consultancy business. That is, since employees likely are put under considerable job demands in the consultancy business we can see no difference between extraverts and introverts.

This difference in perceived stress is not the cause of a moderating effect of the level of extraversion on the relationship between job demands/control at work/social support at work. This lack of effect might be the result of the fact that another kind of relationship exist. We also found that there is a difference between an individual's NFR after work, depending on their level of extraversion. An individual with a high level of extraversion would have less NFR than an individual with a low level of extraversion. This is not surprising due to the characteristics of the consultancy business and the high degree of social interaction demanded of a consultant.

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11. Appendices

Appendix 1 – Questionnaire Introduction Text

Hi,

We are two students at Stockholm School of Economics writing our master thesis where we investigate the relationship between personal traits and stress among consultants. You have received this questionnaire because you work as a consultant.

The questionnaire takes approximately 10-15 minutes to respond to. Your responses are completely anonymous and the participation is voluntary. The responses will not be used in any other context than for this thesis.

Try to be honest with yourself when answering the questions and do not answer how you would like to be, but how you actually are. Even if some questions are similar there are differences between them and you should treat each question separately.

Thank you for your help!

Emma Lövgren & Mai Duong
Contact: 50003@student.hhs.se or 50051@student.hhs.se

Appendix 2 - HSE Questionnaire

D=Demand	C=Control	MS=Manager Support	PS=Peer Support	WRS=Work-related stress

1.	I can decide when to take a break (C)	Never	Seldom	Sometimes	Often	Always
2.	Different groups at work demand things from me that are hard to combine (D)	Never	Seldom	Sometimes	Often	Always
3.	I have unachievable deadlines (D)	Never	Seldom	Sometimes	Often	Always
4.	If work gets difficult, my colleagues will help me (PS)	Never	Seldom	Sometimes	Often	Always
5.	I am given supportive feedback on the work I do (MS)	Never	Seldom	Sometimes	Often	Always
6.	I have to work very intensively (D)	Never	Seldom	Sometimes	Often	Always
7.	I have a say in my own work speed (C)	Never	Seldom	Sometimes	Often	Always
8.	I have to neglect some tasks because I have too much to do (D)	Never	Seldom	Sometimes	Often	Always
9.	I have a choice in deciding how I do my work (C)	Never	Seldom	Sometimes	Often	Always
10.	I am unable to take sufficient breaks (D)	Never	Seldom	Sometimes	Often	Always
11.	I am pressured to work long hours (D)	Never	Seldom	Sometimes	Often	Always
12.	I have a choice in deciding what I do at work (C)	Never	Seldom	Sometimes	Often	Always
13.	I have to work very fast (D)	Never	Seldom	Sometimes	Often	Always
14.	I have unrealistic time pressures (D)	Never	Seldom	Sometimes	Often	Always
15.	I can rely on my line manager to help me out with a work problem (MS)	Never	Seldom	Sometimes	Often	Always
16.	I get help and support I need from colleagues (PS)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
17.	I have some say over the way I work (C)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
18.	I receive the respect at work I deserve from my colleagues (PS)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
19.	I can talk to my line manager about something that has upset or annoyed me about work (MS)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
20.	My working time can be flexible (C)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
21.	My colleagues are willing to listen to my work-related problems (PS)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
22.	I am supported through emotionally demanding work (MS)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
23.	My line manager encourages me at work (MS)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
24.	I find my job stressful (WRS)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
25.	How would you characterise your general or average level of stress? (WRS)	Very low	Low	Moderate	high	Very high
26.	Do you experience levels of stress that you find unacceptable? (WRS)	Never	Seldom	Sometimes	Often	Always

Appendix 3 - PSS Questionnaire

R=Reversed

1.	In the last month, how often have you been upset because of something that happened unexpectedly?	Never	Almost never	Sometimes	Fairly often	Very often
2.	In the last month, how often have you felt that you were unable to control the important things in your life?	Never	Almost never	Sometimes	Fairly often	Very often
3.	In the last month, how often have you felt nervous and "stressed"?	Never	Almost never	Sometimes	Fairly often	Very often
4.	In the last month, how often have you felt confident about your ability to handle your personal problems? (R)	Never	Almost never	Sometimes	Fairly often	Very often
5.	In the last month, how often have you felt that things were going your way? (R)	Never	Almost never	Sometimes	Fairly often	Very often
6.	In the last month, how often have you found that you could not cope with all the things that you had to do?	Never	Almost never	Sometimes	Fairly often	Very often
7.	In the last month, how often have you been able to control irritations in your life? (R)	Never	Almost never	Sometimes	Fairly often	Very often
8.	In the last month, how often have you felt that you were on top of things? (R)	Never	Almost never	Sometimes	Fairly often	Very often
9.	In the last month, how often have you been angered because of things that were outside of your control?	Never	Almost never	Sometimes	Fairly often	Very often
10.	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	Never	Almost never	Sometimes	Fairly often	Very often

Appendix 4 - NFR Questionnaire

R=Reversed

1.	I find it difficult to relax at the end of a working day.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
2.	By the end of the working day, I feel really worn out.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
3.	Because of my job, at the end of the working day I feel rather exhausted.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
4.	After the evening meal, I generally feel in good shape. (R)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
5.	In general, I only start to feel relaxed on the second non-working day.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
6.	I find it difficult to concentrate in my free time after work.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
7.	I cannot really show any interest in other people when I have just come home myself.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
8.	Generally, I need more than an hour before I feel completely recuperated after work.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
9.	When I get home from work, I need to be left in peace for a while.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
10.	Often, after a day's work I feel so tired that I cannot get involved in other activities.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
11.	A feeling of tiredness prevents me from doing my work as well as I normally would during the last part of the working day.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Appendix 5 – The Characteristics of our Respondents

	Frequency	Percent
Gender		
Female	55	53%
Male	49	47%
Age group		
Less than 30	13	13%
30-39	31	30%
40-49	39	38%
50-59	14	14%
60 or more	6	6%
Education level		
High School	11	11%
College/University - 3 years or less	14	14%
College/University - More than 3 years	76	73%
Other	3	3%
Working position		
Audit and/or accounting	14	13%
IT	25	24%
Management	40	38%
Other (e.g. HR, Engineering, Market research)	25	24%
Marital status		
Single	14	14%
In a partnership without children	28	27%
In a partnership with children living at home	43	41%
In a partnership with children not living at home	15	14%
Widowed	1	1%
Other	2	2%
Number of years as a consultant:		
0-1 years	8	8%
1-2 years	12	12%
3-5 years	24	23%
5-10 years	24	23%
11+ years	36	35%
Maximum working hours per week		
21-30 hours	1	1%
31-40 hours	6	6%
41-50 hours	50	48%
51-60 hours	32	31%
More than 60 hours	15	14%

Appendix 6 – Regression analysis; Test for Interaction Effects

Regression analysis. Predictor variable: PSS-I. Unstandardized B-coefficients, margin of error within brackets

	Level of Extraversion (LoE) & Demand	LoE, Demand & interaction	LoE & Control	LoE, Control & interaction	LoE & Social support	LoE, Social support & interaction
Level of Extraversion	-0.084** (0.019)	0.045 (0.101)	-0.77** (0.24)	-0.156 (0.113)	-0.97** (0.024)	-0.111 (0.116)
Demand/Control/ Social support	2.754** (0.418)	4.881** (1.690)	-1.568** (0.472)	-2.675 (1.610)	-0.841** (0.467)	-1.054 (1.844)
Interaction variable		-0.040 (0.031)		0.022 (0.31)		0.004 (0.033)
Intercept	16.466** 1.819)	9.558 (5.621)	30,136** (1.542)	33.948** (5.518)	28.598** (1.606)	29.319 (6.238)
N	104	104	104	104	104	104
R square (adjusted)	0.448	0.452	0.289	0.286	0.236	0.228

** = p<0,01 * = p<0,05

Regression analysis. Predictor variable: WRS-I. Unstandardized B-coefficients, margin of error within brackets

	Level of Extraversion (LoE) & Demand	LoE, Demand & interaction	LoE & Control	LoE, Control & interaction	LoE & Social support	LoE, Social support & interaction
Level of Extraversion	-0.004 (0.004)	0.015 (0.021)	-0.004 (0.006)	-0.012 (0.028)	-0.011 (0.006)	-0.044 (0.029)
Demand/Control/ Social support	0.908** (0.085)	1.227** (0.344)	-0.425** (0.116)	-0.538 (0.395)	-0.173 (0.116)	-0.682 (0.456)
Interaction variable		-0.006 (0.006)		0.002 (0.008)		0.009 (0.008)
Intercept	0.807* (0.369)	-0.230 (1.143)	5.103** (0.378)	5.494** (1.355)	4.556** (0.400)	6.273** (1.543)
N	104	104	104	104	104	104
R square (adjusted)	0.558	0.558	0.168	0.16	0.077	0.08

** = p<0,01 * = p<0,05