



Psychological Distress in the Swedish Construction Industry

The Impact of Culture and Staff Shortages on the Psychosocial Work Environment

Master Thesis in the Master's Programme Design and Construction Project Management

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Göteborg, Sweden 2017

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ABSTRACT

The Swedish housing market is currently facing enormous challenges with housing shortages. In order to meet the demands, approximately 710.000 new homes will have to be built until 2025 (Boverket, 2016). Despite favourable market conditions, there is a growing concern within the Swedish construction industry regarding staff shortages and difficulties to recruit people with sufficient competences. Due to the current debate about psychological distress in Sweden, we find it interesting to investigate how the staff shortages affect the well-beings among employees within the construction industry. In order to achieve a holistic perspective of the issue of psychosocial distress, two empirical studies were conducted, a web-based survey and an interview study.

In the survey, 20 different and larger Architecture, Engineering and Construction (AEC) companies gave their views on work-related distress and organisational measures from an individual perspective. Furthermore, six of these companies participated in the interview study, in which the interviewees shared their company's perspective on distress, stress management and staff shortages. Our findings show that the current staff shortages are estimated to contribute to intensified workloads for AEC employees. Increased workloads have negative impacts on employees' psychological well-beings and work performances, and might also contribute to a more strained and hostile working climate. However, staff shortages cannot necessarily explain every critical stressors that were brought up during the studies, such as role conflicts, Power Distance and certain attitudes. These stressors might instead be influenced by traditional assumptions, conservatism and beliefs within the core of the organisational culture.

The Swedish construction industry has recently shown a more open attitude towards the issue, but our findings indicate that there are still a lot of things that can be improved. To overcome the staff shortages, we suggest faster and easier integration of newly graduates and foreign labour into the business. The younger generation's values and mind-sets regarding '*Work-life Balance*' could possibly contribute to a more modernised organisational work-climate. In addition, the industry must continue to work proactively to change the conservative approach within the organisational culture and make it more attractive for women and Millennials.

Key words: Psychological distress, work environment, stress, stress management, proactive- and reactive measures, Swedish construction industry, AEC industry, organisational culture, staff shortages & '*Work-life Balance*'.

Psykisk ohälsa inom den svenska byggindustrin
Hur den psykosociala arbetsmiljön påverkas av kultur och personalbrister
Examensarbete inom masterprogrammet Design and Construction Project
Management

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SAMMANFATTNING

Den svenska bostadsmarknaden står inför stora utmaningar med den rådande bostadsbrist. För att kunna möta efterfrågan beräknar Boverket (2016) att cirka 710.000 nya bostäder behöver byggas fram till 2025. Trots de goda marknadsutsikterna växer oron inom den svenska byggindustrin gällande frågan om personalbrist och svårigheter att rekrytera folk med rätt kompetenser. Med tanke på den rådande debatten i Sverige kring psykisk ohälsa tyckte vi att det var lämpligt att undersöka hur personalbristen i byggbranschen påverkar det mentala välmåendet hos de anställda.

Två empiriska studier, en webb-baserad enkätundersökning och intervjustudie, genomfördes för att få ett helhetsperspektiv av problembilden. I enkätundersökning deltog 20 olika större arkitekt-, konsult- och entreprenadföretag. Deltagarna fick ge sin syn på arbetsrelaterad ohälsa och organisationsåtgärder från ett individuellt perspektiv. Sex av företagen deltog även i en intervjustudie. I studien fick de intervjuade dela med sig av deras respektive företags inställning till psykisk ohälsa, stress åtgärder och personalbrist. Våra resultat visar att den rådande personalbristen förväntas bidra till intensifierad arbetsbelastning för anställda. Växande arbetsbördor antas ha negativ inverkan på de anställdas psykiska välmående och arbetsprestationer. Detta kan i sin tur orsaka ett mer ansträngt och osunt arbetsklimate. Dock förklarar inte personalbristen alla stressorer som omnämndes i studierna, till exempel rollkonflikter, maktdistanser och särskilda attityder. Dessa stressorer antas istället vara influerade av traditionella antaganden, konservatism och värderingar i kärnan av organisationskulturen.

Den svenska byggindustrin har under senaste tiden visat en mer öppen inställning till frågan om psykisk ohälsa, men våra resultat visar att mycket fortfarande kan förbättras. För att komma till bukt med personalbristen och arbetsbelastningen föreslår vi en snabbare och förenklad integrering av nyexaminerade och utlandsfödda. Den yngre generationens värderingar och inställning till livsbalans mellan arbete och privatliv kan möjligen bidra till ett mer moderniserat och välkomnande organisationsklimat. Utöver detta måste branschen fortsätta jobba proaktivt för att förändra konservativa inställningar inom organisationskulturen, samt göra det mer attraktivt för kvinnor och 80- och 90-talister att söka sig till branschen.

Nyckelord: Psykisk ohälsa, arbetsmiljöhälsa, stress, stresshantering, proaktiva åtgärder, reaktiva åtgärder, Svenska byggindustrin, byggbranschen organisationskultur, personalbrist & livsbalans.

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Preface

This Master thesis constitutes the end of our education at Chalmers University of Technology (Sweden), as Civil Engineering students. The thesis has been written in collaboration with the Department of Architecture and Civil Engineering at the Division of Construction Management. There are several persons who have been involved and contributed to our work, and we would like to acknowledge these.

First, we would like to thank our supervisor Mathias Gustafsson Associated Professor at the Division of Construction Management for all the complementary, critical and reflective thoughts on our thesis. Mathias has given us all the sufficient guidance and trust in our working process to be able to perform the study. Furthermore, we would like to say a big thank you to all those companies and participants who have taken their time to be a part of our study. Without the help and professionalism by these participants, our study would not have been possible.

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Göteborg, June 2017

Sara Blomkvist



Rikard Landegren Hagen



1 Introduction

The following section seeks to present a problem description and reasons for studying Psychological Distress in the Swedish Construction Industry. After a brief background description, the purpose and objectives of the thesis are provided. The Introduction chapter further includes our choice of research questions, research methodology, an overall outline of the research process, as well as limitations.

1.1 Background

The Swedish housing market is currently facing enormous challenges with critical housing shortages and increased demands for tenancies and infrastructure (Arbetsförmedlingen, 2016; Boverket, 2016). At the moment, the construction industry and real estate market in Sweden are experiencing a boom, with thousands of projects underway and many more planned. The ambitious urban planning includes billion Swedish kronor (SEK) of investments up until the year of 2035, not least in the Gothenburg region (Business Region Göteborg, 2017; Sweco 2016). According to Boverket (2016), approximately 710.000 new Swedish homes will have to be built until 2025 in order to meet the current demands. The housing shortage is a result of many factors, such as the unforeseen increase in the Swedish population and previous long-term periods of low investments in the building market.

Despite favourable market conditions, there is a growing amount of concern within the Architecture-, Engineering- and Construction (AEC) industry regarding lack of staff and difficulties in recruiting people with sufficient competences (Arbetsförmedlingen, 2016). While Sweden is facing housing shortages, the construction industry is simultaneously struggling with resource shortages in terms of engineers, architects and craft workers. The staff shortages are estimated to contribute to increased workloads for the employees in the industry. The strained situation is currently forcing companies to turn down project offers (Boverket, 2016).

Alongside the heated debate on housing shortages, another debate is frequently highlighted in the Swedish labour market. This debate concerns the rising levels of sick leaves due to psychological distress at workplaces (Arbetsmiljöverket, 2016; Aronsson, 2015). The number of psychological diagnoses have increased dramatically just over the last decade, and disorders such as stress are today the most common cause behind long-term work absenteeism in Sweden (Försäkringskassan, 2016b). Statistics show that the levels of stress and other psychological disorders are rising among both women and men, young and old, and in almost every occupational group. The reasons behind psychological distress are many (Blaug, Kenyon and Lekhi, 2007; McShane and Travaglione, 2007). Distress can occur due to private or personal factors, as well as external events. However, studies have indicated clear connections between people's work environments and their well-beings. Work-related stress can occur when employees experience hostile conditions at their workplace or when they are given too much work to handle in relation to their resources (Blaug, Kenyon and Lekhi., 2007; Palferman, 2011). The generic perception of work-related distress is that it impacts negatively on employees' performance, as well as their psychical- and psychological well-beings.

Psychological distress generates substantial social- and economical costs for individuals, employers and society (Hellekant, 2014; Palferman, 2011; TT, 2015).

Individuals who are affected emotionally, mentally and physically might find themselves in a condition of being unable to handle their work- or private lives. If a person becomes sick listed, the employer loses vital competence and must try to find a replacement, while society loses tax incomes and faces increased costs for health care and social insurance. Measures to prevent and mitigate psychological distress in work-life are currently discussed and established, both in society and organisations. However, further actions need to be taken. The Swedish Government have installed governing mechanisms in terms of investigations and work environment regulations, for instance the act of Sustainability and Diversity 2015/16:193, also called the Sustainability act. The act has been developed as an action to ensure fair and sustainable business, which according to the UN and the EU, regards taking responsibility for a company's actions and societal influence concerning: *human rights, working conditions, environmental impact and corruption.*

1.2 Purpose

The main purpose of this master thesis is to highlight the issue of work-related psychological distress among managers in today's Swedish construction industry. More specifically, the thesis seeks to examine how the industry's culture and the current staff shortages in the Swedish construction sector have an impact on the psychological well-beings and stress levels among managers.

1.3 Objectives

The objective of this thesis is to identify and display the most common stressors among managers in the Swedish constructions industry. The objectives also include a delivery of proposals on stress management, which construction organisations can apply in order to prevent psychological distress among their employees. The proposals will be provided based on analyses regarding theory on workplace stress, as well as on results from two empirical studies. The empirical studies, include personal and organisational views from managers in the industry. By increasing the knowledge and awareness of psychological distress in the construction sector, this thesis seeks to inspire affected organisations and politicians to take even further preventive actions to mitigate the risks of employee ill-health.

1.4 Research questions

More specifically, the thesis seeks to raise attention about work-related psychological distress in the Swedish AEC industry by examining the following research questions:

1. ***Do Swedish construction companies experience issues of workplace stress and psychological strains among their employees?***
 - *If they do, which are the most common stressors among their employees?*
2. ***How is the current staff shortages affecting the demands, work climate and stress levels for managers in Swedish construction organisations?***
 - *Are there any links between staff shortages and work-related psychological distress in the industry?*

3. ***What can organisations do in order to mitigate the risks of psychological distress at the workplace?***
 - *Are there already any supporting functions in today's construction organisations to deal with the issue?*
 - *Which corrective and preventive actions can be applied?*

1.5 Methodology

The chosen methodology of the thesis is a qualitative- and quantitative method with an abductive research approach. The reason for choosing this approach is the existing lack of specific theory regarding the issue of psychological distress in the construction industry. Additionally, the empirical findings are quite fluent and multidimensional. It is therefore difficult to isolate them into only a few factors. In this thesis, we try to use existing literature on psychological-, stress-related- and organisational theory to be able to establish new theory. We then seek to provide potential reasons for the study's outcome, rather than present actual causes behind the issue. An abductive research method facilitates the possibilities to establish an understanding of a context where there are several patterns and factors influencing (Kovács and Spens, 2005). In other words, it is more intuitive, given the fact that a problem is observed and the cause or causes cannot be entirely explained with existing theory. This process usually consists of an iterative process between theory, empirical data and analysis to identify new theory and findings. The process, which can be visualised in Figure 1, is fluent and generates the possibility to alter and adjust theory as well as the angle of the study. That also means that the study can answer both 'why' and 'what', but it does not necessarily provide a single or perfect answer. Because of the complex nature of the study, several potential reasons to the problem can be identified and presented.

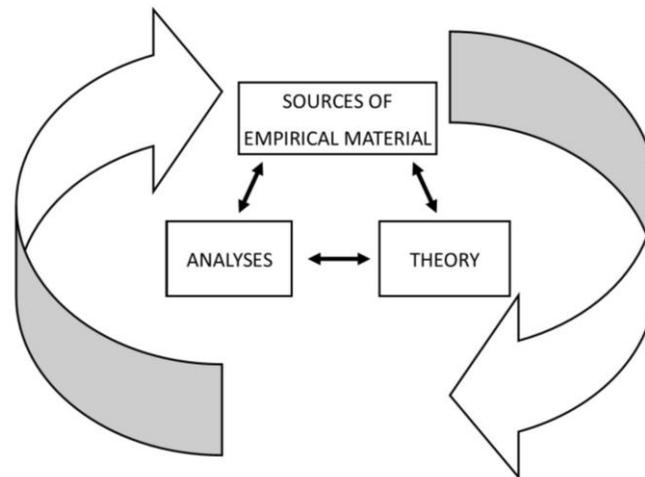


Figure 1 An abductive process.

To combine a qualitative- and quantitative study is according to Bryman (2006) becoming more and more common. This approach is often called a 'multi-strategy research'. The choice of applying a 'multi-strategy' research approach is still not as common as using only a quantitative or a qualitative study. A possible explanation behind the rareness of 'multi-strategy' studies can be the lack of existing established guidelines. Also, this approach might not suit all research fields as the outcome cannot

be planned (Deacon, Bryman and Fenton, 1998). However, this can be perceived as a benefit as well. According to Bryman, (2006) and Deacon, Bryman and Fenton (1998), a ‘multi-strategy’ study provides a wealth of data which could give the researcher findings that he/she had not anticipated in the first place. This could in turn generate new perspectives and ways to perceive a certain problem. As Deacon, Bryman and Fenton (1998, p.48) states: “*We are used to recognizing from insider accounts contained in collections...[/]... that research is frequently a lot more messy and a lot less linear than is often apparent from research methods texts and from articles in academic journals, and that the outcomes are often different from those envisaged at the outset of a research design*”.

We find the ‘multi-strategy’ approach particularly suitable for our choice of study, due to the lack of previous research within the field. This approach gives us a holistic perspective on the topic and enable us to examine several possible views of the outcomes. The thesis consists of a theoretical framework and empirical findings.

The theoretical framework includes a literature review which focus on concepts of organisational culture, psychosocial work environments, stress and stress management strategies. The purpose of the theory is to provide an overview understanding of the various theoretical concepts concerning work-related psychological distress. The theory also includes statistics from the Swedish Social Insurance Agency (Försäkringskassan) and the Work Environment Authority (Arbetsmiljöverket) regarding sick leaves caused by psychological distress. Chapter 2.8 - The Swedish construction sector context, is the last chapter in the Theoretical Framework.

The purpose of the empirical studies is to fill the knowledge gaps between theory and the actual and current conditions in today’s Swedish construction industry. The empirical studies are based on a web-based survey with 85 participants from 20 different companies within the AEC industry, and face-to-face interviews with 9 managers from 6 of the participating companies. The participants are either Project Managers, Group Managers, Local Business Executives or HR-managers. While the web-based survey reflects the participant's personal views and experiences of psychological distress in the organisational context, the face-to-face interviews provide a deeper perspective on the current situation of staff shortages and organisational measures. A further description regarding the outline of the empirical studies can be found in chapter 3, Empirical Methodology.

1.5.1 Literature research – theoretical framework

The information used in the theoretical part has been conducted through readings of scientific articles, journals, books, published news articles and website-information from databases Google Scholar, Summon and other institutions such as different Swedish authorities and federations.

1.6 Ethics

It was a deliberate choice not write the thesis in collaboration with a company, but instead for the Division of Construction Management at Chalmers University of Technology. This enabled us to gain a more objective perspective, while the influence by a company could have resulted in more biased result. By writing for the division, we

also reduced the risks of affecting a certain company's image. The interest was instead to create a holistic perspective of the situation in the AEC industry in Sweden.

Several companies were asked to participate in both the interview study and the web-based survey. Those who were contacted directly were mainly local business executives and they decided if the company would participate or not. Once our request was approved it became acceptable for the employees to take part of our survey- and interview study. The managers who were directly contacted were also our contact persons at the companies. They were responsible for the distribution of the survey. This was the easiest way for us as students to reach as many participants as possible.

The organisations and participants in the empirical studies have been entirely anonymous. Those who took part in the survey did not have to state their name nor age. Also, the survey was designed to not be too personal or jeopardise their careers. The interviews however, were less anonymous as they were conducted through a face-to-face and it is our responsibility not to pass on information about these interviewees.

1.7 Limitations

The thesis concerns work-related psychological distress and not distress caused by private, personal or external factors. The focus, in other words, is on organisational factors behind stress, whereas genetics, family issues, depression and other factors that cannot be directly linked to the work environment, have been excluded. Furthermore, the thesis has been geographically limited to only concern the issue of distress in the Swedish construction industry. No client, nor public or private, is participating in the study. Those companies that are in the study are considered to be 'larger companies' according to Bolagsverket (2012), as every company has a revenue ranging from 100 million SEK up to 50 billion SEK. All participants in the study are managers in contract firms, consultancies or architectural firms based in Stockholm and Gothenburg, Sweden. The managers are either Project managers, Group managers, Business executives or HR-managers on local levels (above middle-managers and under Regional managers). The choice of only interviewing managers on local levels, and not craft workers or representatives from the highest national Top management level, is to gain a perspective from people who have daily insight in both the world of production and management. These managers are responsible for monitoring local units and projects, but must at the same time keep themselves updated and implement the directives from national instances above. It is therefore likely to believe that these managers can provide us with the most holistic perspective on the situation in today's Swedish construction industry.

2 Theoretical Framework

The theoretical framework seeks to explore the concept of psychological distress in the context of organisational knowledge. In order to understand how work-related stress occurs, and which consequences psychological distress brings to organisations and society, the theory takes on a holistic perspective with inputs from psychology, management studies and statistics.

The framework is structured as followed: It begins with a broad perspective on organisational psychology and its expression during the historical development of modern business. Further, we take a closer look on psychosocial environments in organisations before focusing specifically on work-related distress. The critical outcomes of long-term stress are described, followed by up-to date statistics regarding psychological distress and work absenteeism in the Swedish labour market. After this, the framework examines organisational culture and different Stress management strategies before moving on to the critical situation of staff shortages in the Swedish construction sector context.

2.1 Social science and psychology

Social science seek to systematically explain human behaviours on individual-, group-, organisational and societal levels (Kaufmann and Kaufmann, 2016). Examples of three subjects regarding this area of science are psychology, sociology and anthropology. Social science is constantly present in our everyday lives through regular processes such as decision makings, communication and valuations. It also plays an important role in organisational processes, which will be further demonstrated in this thesis.

The topic of psychology is broad and complex, with several different meanings. However, American Psychological Association (APA) (2017) briefly defines psychology as “*the study of the mind and behavior*”. There are several different fields within the area of psychology, such as behavioural- social- cognitive- and organisational psychology (Kaufmann and Kaufmann, 2016). Behavioural psychology, seeks to study and find explanations for the human behaviour. Social psychology studies people's thoughts, emotions and actions in social situations, and how actions of others influence the behaviour of the individual. Cognitive psychology focus on the human mind, and how the mind receives and understands ideas and impressions. This thesis, however, focuses mainly on organisational psychology, which is explained more thoroughly in the following section. Organisational psychology will also characterize the overall theme of this master thesis.

2.2 Organisational psychology – a part of I/O psychology

Organisational psychology is a scientific field within psychology that seeks to understand the behaviour of individuals and groups working in organisational settings (Jex and Britt, 2014). Organisational psychology is commonly referred to as occupational psychology or, simply, work psychology (Business Dictionary, 2016). Organisational psychology can be seen as a specific part of a broader concept called Industrial/Organisational (I/O) psychology, which further is explained as “*the application of the methods and principles of psychology to the workplace*” (Jex and

Britt, 2014, p.4). Figure 2, illustrates the distinction between the Industrial branch and the Organisational branch, which together build up the concept of I/O psychology.



Figure 2 The two branches of Industrial/Organisational psychology. Adapted from Jex and Britt (2014).

As can be seen in the figure, the topics on the Industrial side are more focused on management of human relations, including selecting and classifying right kind of employees, while the Organisational side is more concentrated on human behaviours and social processes at the workplace. This papers will focus more on the organisational side of I/O psychology.

According to Business Dictionary (2016), I/O psychology “covers application of applied and social psychology to accident proneness, fatigue, mental health, safety; appraisal, selection and training of employees, personal relations and conflicts, management control systems, and interactions among humans, machines, and the environment”. Furthermore, APA (2016) suggest that I/O psychology addresses issues of workplace motivation and reward systems, quality of work-life, performance measurements, recruitment and training and development. One could shortly say that I/O psychology focuses on problems in working environments, and on the deriving behaviours of those individuals working in organisations.

Kurt Lewin, a pioneer within social psychology, was one of the early founders of organisational psychology as a scientific discipline (van Knippenberg, 2011). Lewin and other psychologists early emphasised the importance of theory in the area of I/O psychology. How people make sense of things depends on which theory they use. In order to predict and understand behaviours in workplaces, specialized knowledge of human performance, human factors, organisational development, attitudes and decision theory is required (APA, 2016).

2.2.1 Occupational health psychology

Occupational Health Psychology (OHP) is a field within organisational psychology that is concerned with improving the quality of work-life, health and security for employees (Antoniou and Cooper, 2011). OHP is a study of organisational, social and mental aspects of the relationship between work-life and personal health that seeks to secure job satisfaction and prevent ill-health. It includes knowledge from psychology,

organisational studies, occupational sociology, industrial engineering and economics (SOHP, 2017). OHP focuses specifically on psychosocial work environment factors, including stress and managerial behaviour (Antoniou and Cooper, 2011). It can be applied to help companies to create more pleasant work environments for their employees (Kaufmann and Kaufmann, 2016). By carefully addressing the needs of employees, organisational psychologists have found that a company's productivity and efficiency can be improved. These organisations are usually more successful when it comes to providing high-qualitative services and increasing salary (Cooper, 2017). OHP is also considered to mitigate the risk of corporate problems and employee burnouts (Kaufmann and Kaufmann, 2016). According to Åsberg et al. (2010) and The Swedish Social Insurance Agency (Försäkringskassan, 2016c), stress-related ill health is today the most common reasons behind long-term sick leaves.

2.2.2 The emergence of psychology in work-life

To understand how organisational psychology has developed into a modern scientific discipline, one must look back at the last century of modern history in managing- and organisational theory (Kaufmann and Kaufmann, 2016). Some major perspectives can be identified along the way. In the beginning of the 20th century, the American engineer F.W Taylor developed *Scientific management*, a discipline regarding organisation of work and efficiency in industries (Clegg, Kornberger and Pitsis, 2011) Taylor used time studies and observations in order to make organisational systems more efficient. His approach emphasised standardisation of time and routinisation of motion controlled by authoritative experts. This was accomplished by so called rational division of labour, in which work processes were carefully analysed and work tasks were distributed between workers in attempt to reach maximum standardization and efficiency.

While Taylor's system had been heavily concentrated on work efficiency from a standardised perspective, researchers in the 1930's turned attention to the need of social relations and psychosocial satisfaction at the workplace (Clegg, Kornberger and Pitsis, 2011). An early pioneer within the area was Elton Mayo, who together with Hawthorne-researchers highlighted a significant relation between employees' well-beings, their motivation and work efforts. They stated that organisational productivity would increase if workers were given appreciation for their efforts. The relationships between managers and employees were considered to be of great importance, and researcher believed that less formality and more personal connections between the parties would increase the feeling of psychosocial security in the organisation. The concept of *Human Relations* was born.

2.2.3 The historical transformation of business and work-life

It is vital to consider the changing way of business throughout the 20th century as a critical game changer for the way organisational psychology has been expressed. For the last two centuries and up until now, humanity have experienced some major societal shifts due to massive technological achievements - from the Agrarian Age, through the Industrial era and up until today's Information Age (Ahlqvist, 2005). During the Industrial era, production has shaped from being mechanical- and steam-power based manufacturing to become standardized and later on highly complex due to cyber-physical systems.

What can be shortly said, is that the historical characteristics of industry and technology have contributed to a transition from craft- and mechanical manufacturing to a modern knowledge based society. According to Dicken (2011), the decline of traditional manufacturing in the 1970's and following informalisation of work have resulted in a growing service sector. The shift in balance of employment towards services is partly explained by globalisation, technological development and increasing participation of women in the labour force. Technological innovations of products and processes are regarded as critical factors for the type- and number of jobs available. Processes innovations, in particular, seek to lower production costs and increase productivity. Some criticize these innovations for being labour saving, rather than job creating.

However, as Dicken (2011) points out, Information and communications technology (ICT) and automatisisation does not necessary destroy jobs but create opportunities for new types of jobs as well. High-cost economies have a huge potential to create higher-skill jobs and move up the value chain. The transition towards more high-skilled service jobs will also increase the level of knowledge-based capital among employees. Figure 3, shows how the rates of Swedish employment in three different work sectors - agricultural, industry and service, have changed between 1860 and 2020 (Bergsten, Hedström and Thorburn, 2015). As can be seen the service sector is, and will continue to be, the most dominant sector while the agricultural and industrial sector are becoming less and less important for employment and economy.

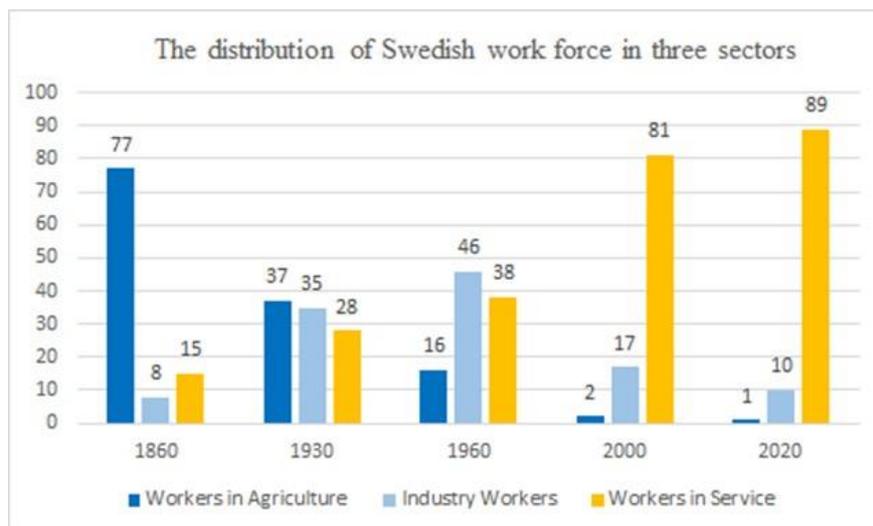


Figure 3 The changing distribution of the Swedish labour force between agriculture, industry and service from 1860 up until today. Adapted from Bergsten, Hedström and Thorburn (2015).

The nature of organisations continues to be shaped by societal paradigm shifts. The development of technological innovations, globalisation and labour market constantly affect the way in which companies organise their business (Clegg, Kornberger and Pitsis, 2011). As the business and context of organisations transforms, so does the psychosocial movements in the organisations. The nature of occupational health management (OHM) in Sweden has changed remarkably during the last 50 years, which can be seen in Figure 4. (Bergsten, Hedström and Thorburn, 2015). From mainly having included questions about physical health, today's OHM focuses its attention towards several psychosocial aspects as well.

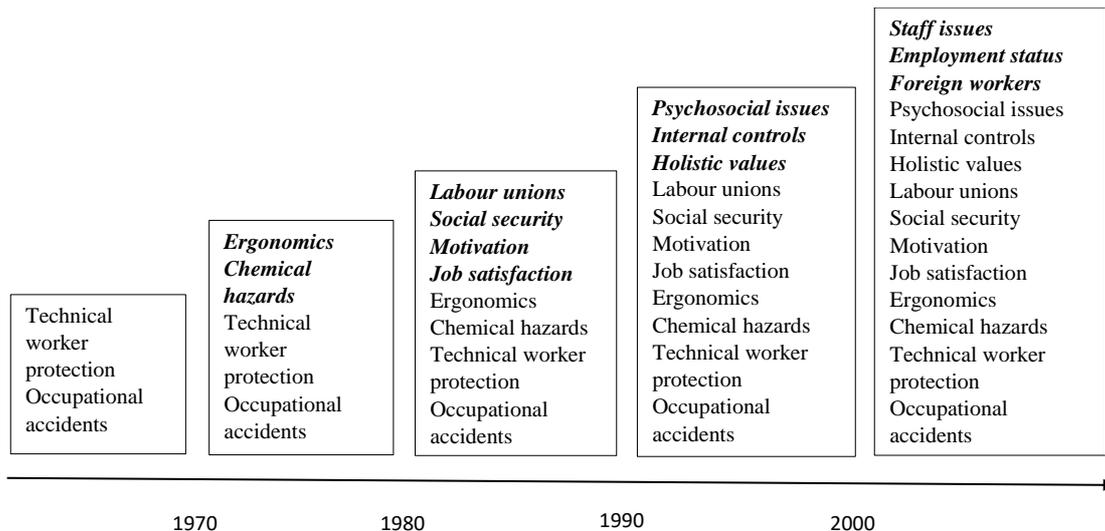


Figure 4 The changing pattern of occupational health measures in Sweden. Adapted from Bergsten, Hedström and Thorburn (2015).

2.3 Psychosocial work environment

Following the previous overview of organisational psychology and its relationship to the historical development of business, the upcoming section seeks to explore the concept of psychosocial work environments. Work environments, either good or bad ones, affect us directly in both physical and psychological ways. For instance, a hostile work environment is likely to have negative impacts on employees' well-beings and performances. As will be explored in chapter 2.4, dysfunctional psychosocial work environments can be closely related to the issue of work-related distress.

2.3.1 Defining psychosocial work environment

Work environment refers to the physical and psychosocial context in which employees perform their duties (Money-Zine, 2017). It can include the surrounding physical conditions, such as office temperature, air quality and equipment, but also social interactions, work procedures and processes. Social interactions might involve relationships between employees, subordinates and managers. It is in most organisations' interest to create a healthy and welcoming organisational work environment (Hultberg, 2007). A workplace with a good environment is likely to contain sufficient organisational leadership, strategic management procedures, established organisational guidelines and access to employee health care.

The term *Psychosocial* describes the relation between cognitions, emotions, behaviours and individual psychological processes within social interactions and contexts¹. The concept of psychosocial work environment is well connected to the climate and culture of a workplace (PSHSA, 2011). According to Hultberg (2007) and PSHSA (2011), a healthy psychosocial work environment should address following issues;

- Respect for 'Work-life Balance'

¹ Rugulies, R. (2014) Well-Being and Psychosocial Work Environment. In: *The 3rd International Well-being at Work*; May 26th to 28th 2014, Copenhagen.

- Influence in work processes
- Social support - ensuring employee psychological health and safety
- Encouraging employee feedback on organisational practices
- Meaningfulness in work
- Valuing employee wellness
- Mechanisms to reward performance
- Zero tolerance for discrimination, harassment and bullying

These guidelines can be considered as general for organisations who want to improve and maintain high quality of workplace climate. One must, however, keep in mind that every organisation is unique. What works for one organisation, does not automatically fit for another. Specific measures must be implemented according to current working conditions and leaders in organisations should strive after employee participation and process-oriented work methods (Hultberg, 2007). It is also important to notice that a healthy work environment is created by a broad range of factors from the psychosocial- and physical environment, as well as from personal health practices (PSHSA, 2011).

2.3.1.1 Positive employee behaviours in healthy organisations

An organisation with a healthy psychosocial work environment, will likely experience the benefits of positive attitudes and behaviours among their employees (Kaufmann and Kaufmann, 2016). While attitudes refer to an employee's feelings towards his or her workplace, colleagues and environment, behaviours are the practical responses to attitudes (Higuera, 2017). Attitudes influence workplace performances to become of either a negative or positive character. Workplace attitudes and behaviours will, in other words, affect both the atmosphere and the productivity within an organisation.

Some examples of positive employee attitude include feelings of job satisfaction and job engagement (Kaufmann and Kaufmann, 2016). A positive workplace atmosphere is considered to increase the levels of creativity, as employees feel that their ideas are valid for organisational success. It can also inspire and motivate employees to perform better, which in turn increases productivity. Other examples of positive behaviours include high attendance, punctuality and responsibility taking (Cooper, 2017). According to Cooper (2017), research has shown that those employees who enjoy his or her work situation also find it easier to meet deadlines.

2.3.2 Hostile work environments: characteristics and consequences

Grawitch, Ballard and Erb (2015) present five different factors which contribute to employees' well-beings and organisational functioning: *Health and safety*, *Employee involvement*, *'Work-life Balance'*, *Employee growth and development* and *Employee recognition*. An unhealthy work environment does not fulfil all of these requirements. Instead, a hostile workplace is commonly characterized by low job satisfaction, organisational ineffectiveness, job insecurity and ill-health (Buys, Matthews and Randall, 2010; International labour organization, 2016). These attitudes and behaviours, which oppose the organisational standards and aims, are generally described as counter behaviours (Kaufmann and Kaufmann, 2016).

Counter behaviours in workplaces are often related to antisocial and, sometimes, aggressive responses (Kaufmann and Kaufmann, 2016). Some of the more critical variants are bullying, violence and sexual harassments. Other negative behaviours include anger, rudeness and yelling (Higuera, 2017). Counter behaviours among

employees are likely to lead to direct negative economic consequences due to decreased performance and productivity (Kaufmann and Kaufmann, 2016). Indirectly, other problems might occur such as negative effects on people's well-being and encouragement at the workplace.

According to Kaufmann and Kaufmann (2016), two of the most critical results of counterproductive workplace attitudes and behaviours are *absenteeism* and *staff turnovers*. Poor attendance rates can be an indicator of a dysfunctional psychosocial working environment. High rates of *Staff turnovers*, which is the average time for how long an employee stays within the organisation before resigning, can also be an alarming signal - suggesting that something is not quite optimal within the organisation.

According to Nieuwenhuijsen, Bruinvels and Fring-Dresen, (2010), a dysfunctional work environment can pose a threat to employees' mental health. For instance, workers who experience long term pressure and high work pace may risk finding themselves under psychological distress. Distress, according to Nieuwenhuijsen, Bruinvels and Fring-Dresen (2010), is "*a heterogeneously defined term that refers to unpleasant subjective stress responses*". People can experience distress on many levels, however, when stress levels reaches clinical relevance it may turn into stress-related disorders (SRD). SRDs include many different diagnoses, for example burnout and adjustment disorders. The concepts of distress will be furtherly explained in the following chapter.

2.4 Stress and work-related stress

In this section, we explore the concept of stress, particularly in a work-related context. As will be explained, stress can be of either a positive or negative nature. The main focus of this thesis, however, is to highlight the issue of psychological distress that has a critical impact on work performance and employee well-being.

2.4.1 What is stress?

Stress, originally conceptualized by Hans Seyle in the 1950's, is a relatively young concept within academia (Blaug, Kenyon and Lekhi, 2007; Kumar and Jain, 2012; McShane and Travaglione, 2007). Several researchers within the field of stress and stress management agree that there is still little understanding and disagreement among academics regarding the meaning and definition of stress.

The term *Stress* has been used as a synonym to describe situations where people e.g. experience fatigue, feel pressured or struggle to cope with the demands of work (Blaug, Kenyon and Lekhi, 2007; International Labour Organization, 2016). McShane and Travaglione (2007, pp.200) addresses stress as "*an adaptive response to a situation that is perceived as challenging or threatening to a person's well-being*". Stress is originally a biological fight-or-flight mode reaction (Björndahl and Castenfors, 2012). It is the body's way to respond when we are experiencing danger or threat from our surrounding environment. It either prepares us to confront and fight the danger or flee.

However, there are different perspectives on stress and not all type of stress is necessary bad. Some type of stress is actually good and important for our survival. '*Bad stress*' is scientifically referred to as *distress* (Kumar and Jain, 2012; McShane and Travaglione, 2007). The opposite, the '*good stress*' is called *eustress*. In moderate quantity, eustress helps us to improve our performance and achieve certain goals and results, as it

increases our efficiency and motivation to deal with the tasks. Distress, on the other hand, decreases our performance and has negative consequences on our health on a short- or long term perspective. Distress can cause both physical and psychosocial loads such as headache, difficulty to concentrate and feelings of exhaustion.

Blaug, Kenyon and Lekhi (2007) present the three common aspects of the modern definition of stress;

- Stress is a personal experience
- Stress is caused by pressure or demands
- Stress impacts upon the individual’s ability to cope or, at least, his or her perception of that ability.

2.4.2 Defining work-related stress

Several studies emphasise the importance of a having sustainable work environment, as psychological distress might cause many issues for both organisations and society (Brough and O’Driscoll, 2010; Kumar and Jain, 2012; Palferman, 2011). For instance, a study conducted in the UK regarding workplace health has showed that psychological illness costs the country approximately £3.4 billion annually due to 11.4 million lost work days (Palferman, 2011). Furtherly, Blaug, Kenyon and Lekhi (2007) argue that stress is the costliest of all worked-related illnesses regarding work-day lost per case.

Work-related stress occurs when employees are put under too high pressure and demand e.g. are given too much work to handle in relation to their resources (Blaug, Kenyon and Lekhi, 2007; Palferman, 2011). The generic perception of work-related distress is that it impacts negatively on employees’ performances, as well as their psychical- and psychological well-beings. Work-related distress is triggered by various factors. McShane and Travaglione (2007) divide these factors into four categories, which they call work-related stressors (illustrated in Figure 5 below). They include *interpersonal stressors*, *role-related stressors*, *task control stressors* and *organisational and physical environment stressors*.

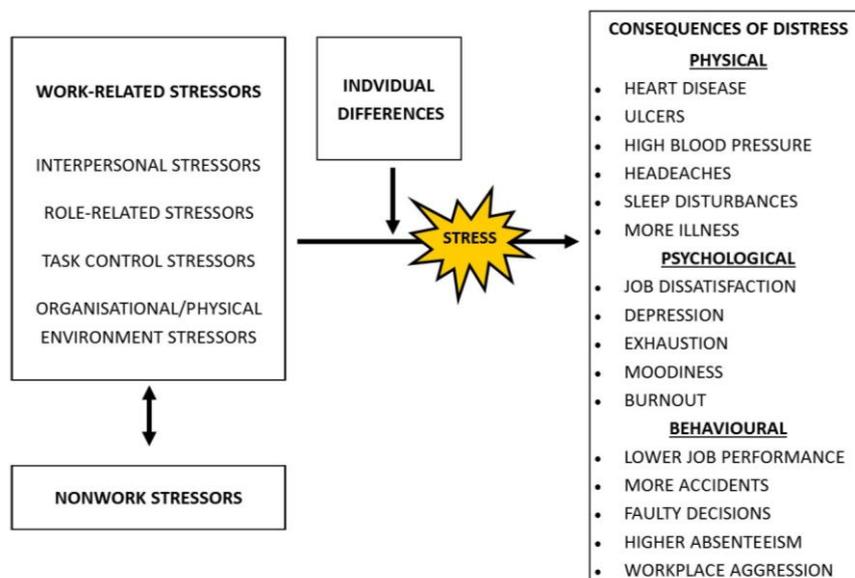


Figure 5 Work-related stressors. Adapted from McShane and Travaglione (2007).

- *Interpersonal stressors* concern the relationship between colleagues (McShane and Travaglione, 2007). This stressor is the most pervasive one due to the current trend of working in teams and promoting teamwork. Increased interaction between employees has its benefits, but might also result in unpleasant conflicts. Examples of interpersonal stressors are sexual harassment, workplace violence and bullying. Brough and O’Driscoll (2010) suggest that it should be in every organisations interest to create a supportive culture and ‘family friendly’ environment, not only in order to retain current employees but also to attract new ones.
- *The role-related stressors* occur when workers experience problems with knowing and performing certain roles in their work-lives. Stress triggered by *role-related stressors* can be either role conflict or role ambiguity (McShane and Travaglione, 2007). The role conflict occurs when people faces two roles that contradict with their tasks, or when they are expected to perform in certain ways for various roles at the same time. For example, performing so humanistic and caring as possible and still having to be constrained by cost-efficient demands. Role conflicts also occur when a person has to cope with work obligations that contradict with his or her personal values. Role ambiguity concerns the uncertainty of one’s professional role, e.g. when an employee experience uncertainty about his or her performance expectations, duties, work conditions and responsibilities (McShane and Travaglione, 2007).
- *Task control stressors* occur because of the inability to control one’s work and how it should be performed. Instead of taking control over one's own tasks, people are relying on others to control the schedule and order of duties. This in turn reduces the level of motivation and performance.
- *Organisational and physical environment stressors* are stress that emerge from changes within an organisation, such as downsizing, restructuring and reducing job security (McShane and Travaglione, 2007). The distress is created from uncertainties of future employment or the possibility of becoming reassigned to a new role.

Another perspective of categorizing stressors is presented by Palmer, Cooper and Thomas (2001), whose aspects of organisational stressors can be seen in Figure 6.

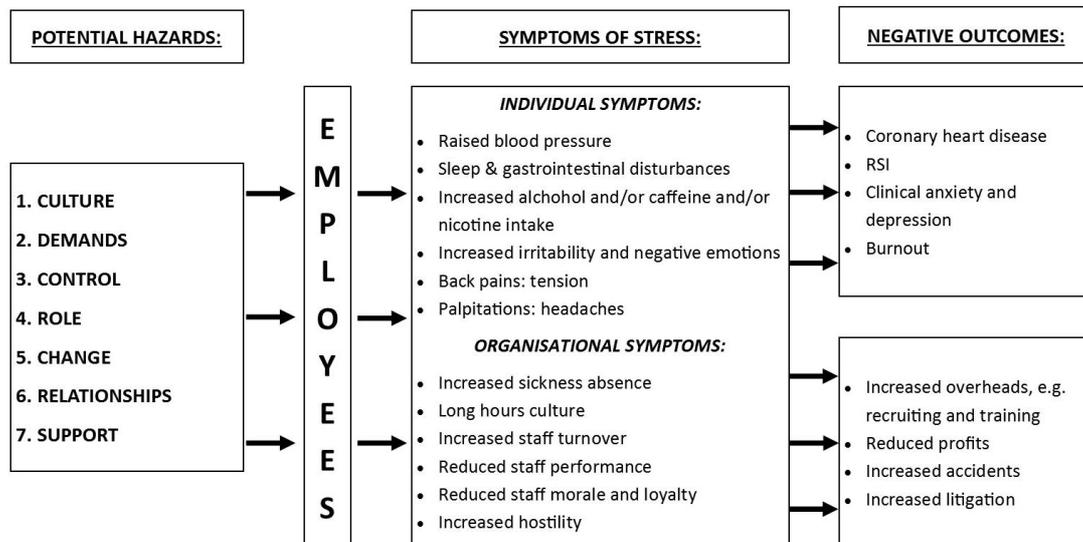


Figure 6 Model of Work Stress. Adapted from Palmer, Cooper and Thomas (2001).

Compared to McShane and Travaglione's (2007) way of categorising stressors, this model focus more on an organisational perspective and how the organisation and their work-environment affect their employees' well-being (Blaug, Kenyon and Lekhi, 2007; Palmer, Cooper and Thomas, 2001). They identify seven different work-related stressors; *demands, control, relationships, change, role and support and organisational culture*. According to the model, employee's stress-levels depend on their relationships with colleagues and superiors, as well as their ability to impact autonomy and level of work-effort.

2.4.3 The impact of workplace stress – demands and performance

As has been explained previously, there is a distinction between positive stress (eustress), and negative stress (distress). Speaking of stress in daily term, people often refer to stress as something bad. What they normally refer to is then distress. But, as Blaug, Kenyon and Lekhi (2007) point out, people actually need some stress in order to motivate themselves and perform. Figure 7 below, illustrates the relationship between the level of demand that a person experience, and his or her ability to cope with the demands.

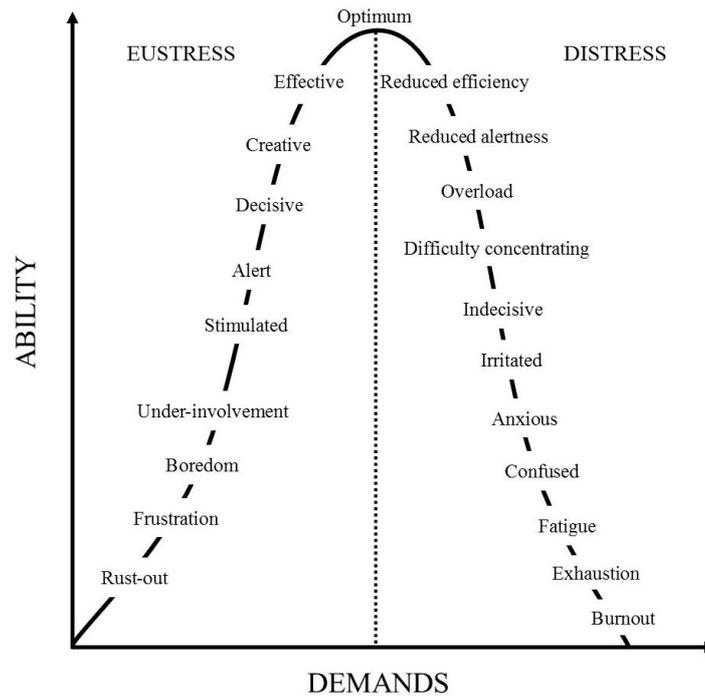


Figure 7 The 'stress-curve' illustrates the level of demand required in order for a person to reach his or her optimum performance point. After passing this point, eustress turns into distress and efficiency decreases. Adapted from Blaug, Kenyon and Lekhi, (2007).

As can be seen, demand helps us to become stimulated, creative, and effective (Blaug, Kenyon and Lekhi, 2007). Up until a certain point, the level of demand generates eustress, which is good for us. This is also the point where we reach our optimum point in work performance and ability to cope with stress. However, once we have reached and past our point of optimum, increasing demands will start to reduce our ability levels. The stress have now changed character from eustress to distress, causing reduced efficiency and alertness. If we become exposed to the current or increasing levels of demand for a long time, we might soon experience more critical symptoms due to distress. Once people reach the point of emotional exhaustion, they suffer a potential risk for gaining SRDs, for instance the *Burnout syndrome*.

2.4.4 Burnout syndrome

One of most critical responses to stress in work-life is *burnout*, also known as *job burnout syndrome* (McShane and Travaglione, 2007). This condition is a type of stress-related disorder and occurs after a process of long-term exhaustion and reduced efficiency due to prolonged exposure to distress. According to Kumar and Jain (2012), long-term imbalance between job demand and job resources is one of the critical stress factors that might decrease adaptation and job performance. The breakdown is furtherly developed into prolonged job stress, which in the long run might result in burnout. In Sweden, burnout is classified as a psychosocial disorder (Försäkringskassan, 2016c)

From having been a rather vague concept in the beginning of its usage, several definitions of *burnout* have been discussed and established over the years. For example, *burnout* can be described as either a multidimensional syndrome, a dysfunctional condition, or as a condition that is successively developed through a process. Åsberg et

al. (2010) describes burnout as a physical response to long-term stress that occurs as a result of too little rest and recovery.

The syndrome is normally developed through three typical stages:

- **Stage 1:** *The prodromal-phase:* Physical symptoms, such as pain in neck-, back- and stomach, sleeping problems, difficulties to concentrate and feelings of panic.
- **Stage 2:** *The Alarming phase:* The person experiences heavy tiredness and lack of recuperation. This phase normally comes suddenly and with great intensity. Both physical and psychological symptoms occur, such as difficulties to remember and participate in conversations, feelings of irritation, depression and anxiety. The person can even become sensitive to sounds and lights.
- **Stage 3:** *The Recovery phase:* This phase can be rather long and demanding. During recovery, the feelings of exhaustion is drawn back. However, the person has now become significantly more sensitive to stress than before the burnout and the risk of relapse is huge.

Job burnout is considered as a very critical condition, which does not only affect the individual in a negative way, but which also have costly socio- and economic consequences for employers and the society. A person who suffers from burnout is unable to work, due to both the physical and mental feelings of exhaustion. Consequently, job burnout will result in work absenteeism. The costs for productivity losses can be expensive for the employer. In turn, the society loses vital tax incomes, but increased costs for medical care.

2.5 Statistics: work-related psychosocial distress in Sweden

The following chapter concerns the rising levels of work-related distress in Sweden, and how psychosocial diagnoses have become the most common reasons for work absenteeism and sick-leaves.

2.5.1 Rising stress-levels among Swedish employees

Has psychological distress become a public health disease? The opinions among several Swedish psychologists, therapists and health insurance companies suggest that this is indeed the case (Aronsson, 2015). For the last decade, the question has been frequently discussed in the Swedish labour market and in the public debate. And there are reasons why.

According to a public report made by the Swedish Work Environment Authority during a twelve-month period between 2015-2016, 22% of all Swedish employees experienced some type of physical load or psychological strain due to occupational conditions (Arbetsmiljöverket, 2016). 26% of all Swedish women, respectively 19% of all Swedish men, were said to have gain work-related disorders from physical or psychological loads. While some employees were just affected by one type of the two disorders, others suffered from both at the same time.

- *Physical loads* refer to ergonomic pain due to strenuous working postures, heavy manual handling and or short repetitive operations (Arbetsmiljöverket, 2016). It can also include headache and stomach pain. In 2015-2016, approximately 9,7% of all employed men and women experienced work-related physical pains.
- *Psychological stress or strains* refer to mental symptoms such as distress, worries, anxiety, difficulties to concentrate, exhaustion and depression (Arbetsmiljöverket, 2016). In 2015-2016, 7,4% of all employed men and women experienced work-related psychological loads. The number was higher for women (9,4%) than for men (5,5%).

According to Arbetsmiljöverket (2016), physical loads were the most common causes behind work-related disorders between 1998 and 2008. However, statistics show that the rate of people experiencing physical pain due to occupational conditions have fallen nearly constantly since 2003. Additionally, the number of people suffering from stress and other psychological strains have increased. This development is illustrated in Figure 8.

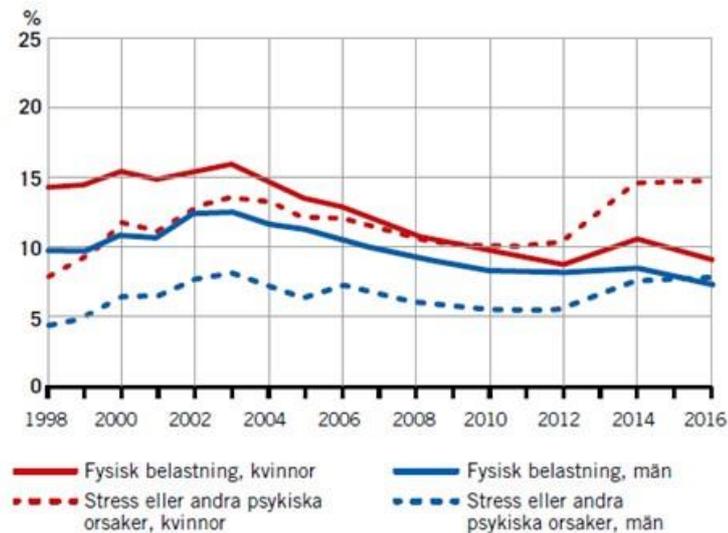


Figure 8 Rates of employed women (red lines) and men (blue lines) in Sweden with work-related loads caused by physical strains (solid lines) or stress and other psychological disorders (dashed lines). Arbetsmiljöverket (2016).

The rising levels of psychological distress, and decrease in physical distress, are statistically determined by Statistics Sweden (SCB) (Arbetsmiljöverket, 2016). Psychological dysfunctions were the most common causes behind work-related disorders in 2016. Among these, stress was explained to be the most common disorder.

Looking more specifically on the statistics for 2016, the statistics suggest that there are differences between groups of age, educational level, income and gender (Arbetsmiljöverket, 2016). Figure 9, suggests that work-related psychosocial distress is most common among employees at age 30-49. People with higher education levels (university studies) were also more stressed than people with less education. The same can be said for employees with middle incomes, among which stress and other psychological loads were more common compared to people with low or high incomes. The statistics also indicates that stress and psychological strains generally affect women more than men.

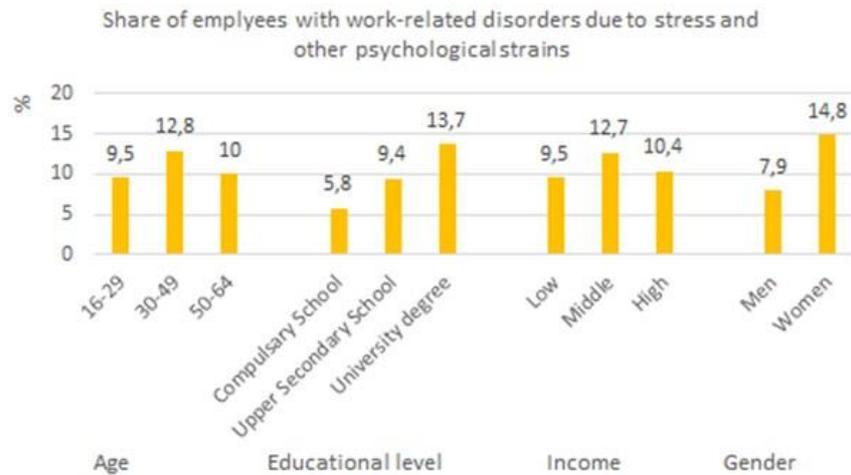


Figure 9 Share of Swedish employees with work-related disorders. Arranged according to age, education, income and gender. Adapted from Arbetsmiljöverket (2016).

2.5.2 Increased rates of sick leave due to psychiatric diagnoses

As previously mentioned, distress is today classified as a psychiatric disorder in Sweden (Försäkringskassan, 2016b). The most common psychiatric diagnoses are anxiety syndromes, depression, stress- and adjustment disorders. The increasing rates regarding work-related psychological distress, provided by The Work Environment Authority above, are relatable to statistics of work absenteeism from The Swedish Social Insurance Agency. These statistics show that sick-leaves due to adjustment disorders and reactions to severe stress have increased rapidly in the last years (Försäkringskassan, 2016a).

Women represent 73% of the increase, which is considerably higher compared to men (Försäkringskassan, 2016a). Even though psychiatric disorders are most common among employees in ages 30-49, the development of rising levels can be seen in every age group. In 2013, psychiatric diagnoses accounted for 84% respectively 85% of the monetary activity compensations for women and men in Sweden (Försäkringskassan, 2014a). Not only are people out of work for longer periods due to mental disorders, but the numbers of employees with psychiatric diagnoses are increasing.

According to Försäkringskassan (2016b), the rate of work absenteeism increased with approximately 98.000 cases between the years 2010 and 2015. The majority of new cases, 59%, were related to psychiatric disorders. The development of psychiatric diagnoses can be seen in Figure 10. Adjustment disorders and stress represented 49% of all new psychiatric diagnoses in 2015 and were thereby the most common psychiatric diagnoses.

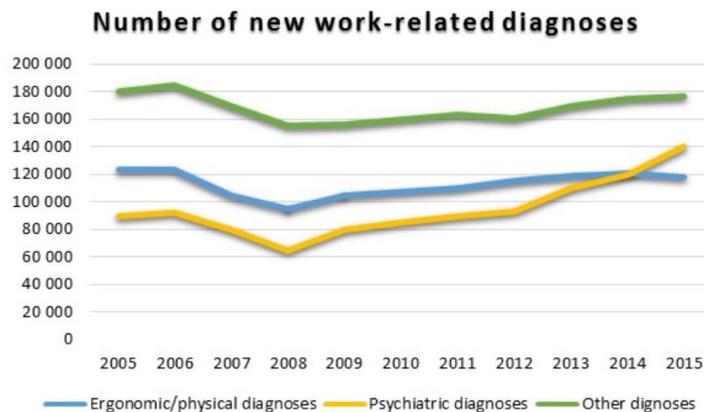


Figure 10 The number of new psychiatric diagnoses. Adapted from Försäkringskassan (2016b).

Research regarding the prevalence of psychiatric diagnoses in Sweden, points towards a relation between sick-leaves and hostile psychosocial work environments (Försäkringskassan, 2014b). Back in 2013, the Swedish government commissioned The Swedish Social Insurance Agency to conduct a study regarding the subject, in which the hypothesis was confirmed and supported by international literature in the field.

The results show that occupational sectors with hostile psychosocial work conditions have a higher prevalence of psychiatric diagnoses (Försäkringskassan, 2014b). According to the study, men and women employed in welfare service occupations were at a particular risk for absenteeism due to mental disorders (teachers, nurses etc.). Many of these had a public sector employer.

Psychosocial distress in work-life is not exclusively a Swedish phenomenon, but according to Strandberg (2015), a growing issue in almost every European country. Approximately one in three European workplaces is estimated to have installed sufficient action plans to prevent stress among employees - two in three have not. One possible explanation for this might be that there is a widespread reluctance to talk about issues of psychological distress in many European companies. Swedish organisations are perceived as the most engaged ones when it comes to addressing issues of psychosocial distress in workplaces. However, Sweden is also the country in which most employees experience the highest levels of time pressure.

2.5.2.1 Sick leaves are expensive for employers and society

According to Försäkringskassan (2016b), 139.000 Swedish employees were diagnosed with a psychiatric diagnose in 2015. This means that many people have fallen off sick, which have increased the expenditures of the Swedish welfare system. The sharp increase of sick listed employees between 2010 and 2015 doubled the expenditures of health recompense: from 16 billion SEK in 2010 to 32 billion SEK in 2015 (TT, 2015). These costs include all types of sick listing and not only those caused by psychiatric diagnoses.

Psychological distress is not just painful for the affected employee and costly for the society, but also expensive for employers (Hellekant, 2014). One sick-listed employee is estimated to cost around 400.000 SEK for an employer. A substantial part of the costs occurs due to production losses.

2.6 The impact of organisational cultures on psychological distress

The thesis has so far provided a brief overview of work-related distress, characteristics of different psychosocial work environments and the latest statistics of stress-related disorders in the Swedish labour market. However, in order to explain why psychological distress occurs at workplaces we have to look deeper into the core values and procedures in the organisation. Which impact does the organisational culture actually have on the psychosocial work environment and presence of work-related distress?

2.6.1 Defining organisational culture

A culture can be defined as the foundation of a certain group of people (Schein, 2010). The feeling of belonging to a common culture helps people to identify and differentiate themselves, just as individual's personality and character defines them and guides their actions. Every culture is unique and what separates the cultures from each other are their own unique values, beliefs and habits (Clegg, Kornberger and Pitsis, 2011).

Cultures are often fluent and context dependent (Clegg, Kornberger and Pitsis, 2011). It is common to define culture as a type of tacit knowledge, referring to its intangibility and the fact that people have to practice it to understand it properly – learning by doing and observing (Clegg, Kornberger and Pitsis 2011; Kaufmann and Kaufmann, 2016; Schein, 2010). Schein (2010, p. 18) defines culture as: “*a pattern of shared basic assumptions learned by a group as it solved its problems of external adaption and internal integration, which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems*”.

According to Schein (2010), the cultural background can be seen as the language and essence of the organisation. A holistic perspective of an organisation's culture is required to fully understand its actions. Kaufmann and Kaufmann (2016) emphasis on the value and importance of understanding organisational culture as it affects the psychosocial work environment, which has been previously described in chapter 2.3. Organisational culture enable us to understand how people are influenced and affected by their organisation.

Schein (2010) states that all group cultures can be studied according to a three-levelled model, which includes the levels of *Artifacts*, *Espoused Beliefs and Values*, and *Basic Underlying Assumptions*. Each of these levels represent a layer of culture in an organisation. *Artifacts* represent the first layer consisting of symbols organisations want to present, for instance different buildings, logos, jargons, behaviours etc. Clegg, Kornberger and Pitsis (2011) state that *Artifacts* are the culture's way to mark their territory and show their power. However, Schein (2010) points out the issue that these symbols essence might not be fully understood if you are not part of the culture.

The second layer, *Espoused Beliefs and Values*, is the underlying ideology and philosophy of the organisation, which can be difficult to define and might be quite abstract (Schein, 2010). Clegg, Kornberger and Pitsis (2011) describes it as invisible features, or as unspoken norms and beliefs of a group which guide them through their discussions in organisational issues.

The final layer called *Basic Underlying Assumptions*, is very deeply rooted within the organisation and is the most difficult to change as it is the foundation of the culture (Schein, 2010). It unconsciously develops and shapes the values, beliefs and norms of an organisation's members. It can be viewed as an intangible and tacit force which governs every part of the organisation, being the essence of the culture. According to Clegg Kornberger and Pitsis (2011) this level is almost invisible, but at the same time the most influential. It has the largest potential to shape the entire organisation.

2.6.2 The impact of strong and weak cultures

When exploring different kinds of organisational cultures, it is common to differentiate them as strong respectively weak (Kaufmann and Kaufmann, 2016). A strong culture can be identified by its tied bonds between its members, which is expressed through strong norms and values, stable leadership and clear expectation on management. In a weak culture, on the other hand, member's behaviours are guided by formal structures rather than values. It is easier to establish a strong culture in a small organisation compared to a large one.

Clegg, Kornberger and Pitsis, (2011) highlight several benefits of having a strong corporate culture. For instance, in a strong culture members often share the same values, habits and norms. Cameron and Quinn (2011) even states that a strong culture is more favourable to achieve success in an organisation. A strong culture can be created through a stable organisational structure, in which the behaviours of employees are predictable and less variable (Malmi and Brown, 2008). It is considered to be easier to establish bonds in a culture with a clear hierarchical dimension (Clegg, Kornberger and Pitsis, 2011).

However, there can also be disadvantages with having strong cultures in an organisations. For example, if all members share the same perspectives, a dysfunctional homogeneity might be created (Clegg, Kornberger and Pitsis, 2011). This homogeneity might prevent innovation and creativity as the employees have too similar mind-sets. Consequently, people can become accustomed to do things a certain way without questioning. An example of an industry, in which strong corporate culture is previewed as a common issue is the construction industry (Dainty Green and Bagilhole, 2007). By having had a majority of white males dominating the industry for a long time, the construction industry has been depicted as a typical '*Macho culture*'.

Worall et al. (2010) express a concern for the UK construction industry by claiming that the culture of the industry is hampering its development. According to Worall et al. (2010) the cultural approach within the UK sector under-values the capability of women. Despite staff shortages it has previously been preferable to mainly recruit men to fill this gap. Worall et al. (2010) suggests that measures need to be taken to remove these recruitment barriers, which Worall et al. (2010, p.272) defines as: "*barriers such as sexist attitudes and stereotypes that can place limitations on their roles and abilities have to be faced, while at the same time having to cope with difficulties in their 'Work-life Balance'*". In this case, the organisational culture itself becomes important to change as it is through the culture new members learn the way of acting in the organisation and which boundaries that are the approved ones (Martins and Terblanche, 2003).

2.7 Removal of hazards – how organisations can mitigate workplace stress

Strategies and research on how to approach psychosocial distress have been a recurrent subject for quite a long time. However, it was not until the 1980's in Sweden that the awareness of healthy work environments became apparent for many organisations (International labour organization, 2016). Since then, several guidelines, strategic tools and other resources have been published by different organisations such as the World Health Organization (WHO), The Nordic Council and the World Bank in order to undermine the issue of psychosocial risks in work-life.

2.7.1 Approaches on how to prevent and manage workplace stress

According to Palmer, Cooper and Thomas (2001), one of the most important steps to mitigate workplace stress is to begin by removing potential stressors. These hazards, which were discussed previously in chapter 2.4, are often the underlying causes of work-related distress. However, Palmer, Cooper and Thomas (2001) also argue that this type of stress management strategy might turn into a reactive approach, where the focus is constrained to reduce only the apparent stressors, instead of trying to find the actual root causes behind the issues. Raitano and Kleiner (2004, p. 32) define stress management as “*a continuous process of monitoring, diagnosing, and prevention of excessive stressors that adversely affects employees, managers, and productivity*”. This definition provides a holistic perspective, including combined measures of both active stress reduction and continuous action plans in order mitigate distress.

Ornelas and Kleiner (2003) present the following three-step process for managing workplace stress:

1. Assess the workplace for factors that contribute to harmful stress.
2. Implement stress management measures to reduce workplace stress.
3. Monitor the progress and implement adjustments as appropriate.

The three stages are also commonly known as *Primary-, Secondary and Tertiary stress management* (Blaug, Kenyon and Lekhi, 2007; Grawitch, Ballard and Erb, 2015; Raitano and Kleiner, 2004).

- *Primary management* includes two different perspectives. According to these views, stressors can be reduced either reactively or proactively (Blaug, Kenyon and Lekhi, 2010). By these means, focus is set on either the individual or on the organisational culture and work environment. This first step of stress management seeks to assess workplace stress. It starts by reviewing statistics and comments found in the company's database regarding perceived stress levels, absenteeism, customer complaints connected to employee's behaviour (irritation, frustration etc.), verbal and psychical conflicts among employees and employee turnover rates. Each of these measurable factors can be related to workplace stress (Ornelas and Kleiner, 2003).

As aforementioned, Palmer, Cooper and Thomas (2001) expressed a concern that many organisations are focusing on reactive solutions rather than proactive. This view is shared by Blaug, Kenyon and Lekhi (2007), who also state that the choice of stress management strategy is largely a question of time and money. It is often easier to emphasise the individual's' own responsibility and provide

him or her with training and tools, rather than doing substantial organisational restructurings.

- *The secondary approach* focuses on how individuals could reduce their stress levels through physical training and relaxation (Blaug, Kenyon and Lekhi 2010; Raitano and Kleiner, 2004). This could include activities such as mediation and therapy, but also accessibility to professional help (Raitano and Kleiner, 2004). Blaug, Kenyon and Lekhi (2007) suggest that every organisation should try to offer their employees professional support if they are having problems with distress. Dealing with distress can be difficult alone. However, talking to a professional and getting help to express the issue in words is considered to be helpful in the recovery process. According to Buys, Matthews and Randall (2010) and Grawitch, Ballard and Erb (2015), a person who has been on sick leave because of psychological distress, will experience a high risk of relapsing when returning to work - especially if the stressors behind the distress have not been properly removed.
- The last stress management strategy, *tertiary management*, focus the process of conducting a plan for return to work after absenteeism related to psychological distress (Blaug, Kenyon and Lekhi 2010; Raitano and Kleiner, 2004). Even though it cannot be guaranteed that the employee will return to their fullest potential, an individual plan is likely to ease the transition (Raitano and Kleiner, 2004). Blaug, Kenyon and Lekhi (2007) presents five different functions of the tertiary management:
 1. Assessment of the worker's needs
 2. Planning and setting of goals
 3. Co-ordinating of the required treatment and services to achieve these goals
 4. Implementation of the plan and linking the worker to the services required
 5. Monitoring and evaluation of the plan's outcomes and success levels.

The choice of function usually depends on the situation of the individual and his or her needs (Blaug, Kenyon and Lekhi 2010; Raitano and Kleiner, 2004). However, it is also important to take proactive actions before an unpleasant situation escalates. If proactive actions are not taken, then the organisation might risk losing both capital and vital competence. Both organisation and employees will benefit if critical elements in organisational culture and environment are addressed and corrected in early stages.

2.7.2 Governance of work environment and health in Sweden

The government of Sweden has implemented laws and regulations that provides organisations with guidelines on how to organise and run business in a sustainable way. The following sections presents some of the laws and regulations related to work environment.

2.7.2.1 The Work Environment Act

The Swedish Work Environment Authority has on behalf of the Swedish government, the responsibility to ensure that the Work Environment Act is successfully implemented and followed by every employer in Sweden (Arbetsmiljöverket, 2016). The purpose of the Work Environment Act is to guarantee that all employees are provided a healthy

and acceptable work environment, adjusted to the needs of the employees. The Work Environment Authority is responsible for the official statistics regarding occupational health and environment. Further, according to the act, the employer has a responsibility to take preventive actions in order to avoid ill-health at the workplace (Bergsten, Hedström and Thorburn, 2015). By these means, the employer has a long-term responsibility for both the physical and psychosocial work environment.

2.7.2.2 The employee's responsibility, SFS 1977:1160

This part of the Work Environment Act (3th chapter, 4§) highlights the individual responsibility of the employee (Bergsten, Hedström and Thorburn, 2015). According to the law, every employee has a responsibility to participate and contribute in the work of creating and sustaining a healthy work environment (SFS 1977:1160). The employee must comply with regulations, apply protection measures and act carefully in order to prevent accidents and ill-health. If the employee experience dysfunctions or hazards in the work environment, such as strenuous workload, he or she must immediately inform the employer. The employee is a part of his and his/her colleagues' work environment, and must therefore show respect and take responsibility for his/her contribution to the climate at the workplace (Bergsten, Hedström and Thorburn, 2015).

2.7.2.3 The act regarding corporate reporting of sustainability and diversity, Proposition 2015/16:193

Due to the change of the Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertaking and groups, the Swedish government has implemented the amendments to the act regarding reporting of Sustainability and Diversity (2015/16:193). This act is also called the Sustainability act, 2015/16:193, which took effect after 31st of December 2016. The act has been developed as an action to ensure fair and sustainable business, which according to the UN and the EU regards taking responsibility for a company's actions and how they influence and impact the society concerning: *human rights, working conditions, environmental impact and corruption.*

The Swedish government underlines that this change to the act will put pressure on companies to act more sustainable, as they see it as essential to become successful, modern and innovative companies (2015/16:193). Sustainability has almost become synonymous to being strong as well as a sign of flexibility. For instance, many investors today have sustainability as a criterion if and when they choose to invest, and sustainability has also influenced the behaviour of people in their choices in their everyday life as i.e. being more environmentally.

Those companies who are affected by the act are those that achieve at least two of these three criteria:

1. The average amount of employees during the last two years have been more than 250 each year.
2. For each of the two last year the total assets have been more than 175 million SEK.
3. For each of the two last year the net sales have been more than 350 million SEK.

Companies which fulfil these criteria shall present a report each year regarding the development of the company, its results, the opinions and consequences of its business

in those questions regarding environment, social conditions and personnel (2015/16:193).

2.7.3 Organisational ‘Work-life Balance’

During the last decade, there has been an increased interest in research on how organisations facilitate their employees with opportunities to create so called ‘*Work-life Balance*’ (WLB) (Deery, 2008; Deery and Jago, 2015; Forsyth and Polzer-Debruyne, 2007; Struges and Guest, 2004). WLB refers to the balance between the private life and work-life. However, the term does not indicate if it is the organisation’s or the individual’s responsibility to achieve WLB. Employment New Zealand (2016) defines WLB in following way; “‘*Work-life Balance*’ is about effectively managing the juggling act between paid work and the other activities that are important to people. It’s about work not completely crowding out the other things that matter to people like time with family, participation in community activities, voluntary work, personal development, leisure and recreation. It is sometimes called working flexibly”. By this definition organisations have some responsibility to facilitate the possibilities for WLB.

According to Deery and Jago (2015), WLB is the most prominent factor for retention of employees within organisations. This is considered to be connected to societal changes, where the younger generations are having different views and values regarding work-life compared to the older generations (Bond, 2004; Sturges and Guest, 2004). According to Sturges and Guest (2004), the new generation of young people wants the best of two worlds. They want to feel appreciated and stimulated by their work, but they are not willing to work long-hours during a longer period of time, as they value private life carefully. This view on work-life flexibility is not just shared by people who are thinking of starting a family, but common among most young people. WLB is likely to reduce turnover rates and increase organisational commitment and job satisfaction (Deery and Jago, 2015). Forsyth and Polzer-Debruyne (2007) also argue that perceived WLB will generate more loyalty and reduced feelings of workload pressure.

However, it takes efforts to achieve balance. According to Bond (2004) and Sturges and Guest (2004), it has been tradition to work long hours and to show commitment, consequently as a result of historically male dominated organisations. Hard work has previously been perceived as the essence in order to advance within an organisation. This view does not correspond to the development of contemporary organisations, since the new generation has another perception. Young employees of today will indeed accept long working hours and high workload, but only for a shorter period of time (Sturges and Guest, 2004).

The increased participation of women in work-life is also considered to be an important factor for the change of perception (Bond, 2004). Society is today experiencing a paradigm shift regarding children healthcare, where fathers want to have a more active parental role and spend more time with their children. This causes some conflicts with the traditional gender roles in organisations. To conclude, WLB is today becoming increasingly promoted and organisational structures are evolving to fit contemporary values, beliefs and norms.

2.8 The Swedish construction sector context

The following section focus on the Swedish construction industry. A short description of characteristic features of the business is presented, as well as the current conditions and future concerns within the industry.

2.8.1 A brief overview of the construction industry

The construction industry is often described as a typical project-based industry². By these means, organisations in construction commonly arrange their business around one or several construction projects at the same time. A project can, according to The Project Management Institute (PMI) (2013, p.4), be defined as followed: “A *project is a temporary endeavour undertaken to create a unique product, service, or result*”.

Brittain² and PMI (2013) summarise the most important characteristics of a project as followed:

- A project is unique and every project has its specific characteristics.
- Projects have a specific objective to be completed within certain specifications.
- A project delivers a result (often a product or service).
- There are limited amounts of time and money to execute the project. Defined start and end dates.
- A project usually involves a number of different stakeholders.
- Projects are multifunctional (they cut across several functional lines).

Since every project is unique and only executed for a limited range of time, the project-based structure will result in temporary team-working processes². This puts high demands of sufficient co-operation and communication between the actors involved, and not least on sufficient contract relations and distribution of responsibilities.

2.8.2 The current situation in the Swedish construction industry

In 2016, the Swedish construction industry finds itself in a rather rare situation, where the demand for construction of housings and infrastructure is significantly booming. The situation, in which investments are reaching historically peaks, can only be compared to the previous boom in the 1970's - ‘*The Million Programme*’ (Arbetsförmedlingen, 2016; Boverket, 2016). According to Boverket (2016), approximately 710.000 new homes need to be built during the period 2016-2025, which can be seen in Figure 11. Regeringskansliet (2016) states that the Swedish government has set their minimum limit to 250.000 new homes before 2020. However, according to Boverket (2016) at least 440.000 new homes would be needed by that time in order to meet the necessary demands. The housing shortage is a result of many factors, such as the unforeseen increase in Swedish population and the previous long-term period of low investments in the building market. Between 2012 and 2015, 127.700 new housings were built (approximately 31.925 housings per year). In order to meet the demand by 2020 approximately 82.000 new housings need to be built every year, which are almost three times more than previously. The actual amount of construction between 1950 and up until today is illustrated in Figure 11. Additionally, Sweden has accepted many

² Brittain, B. (2015) *Project Management – Project Organisations and Governance*. [BOM016 Lecture to MSc DCPM]. Chalmers University of Technology, 7th September 2015.

refugees in the last years which has contributed to the increase in population and need for new homes. Boverket (2016) points out that the forecast of demand of new housings depends largely on whether the population will continue to grow. However, predicting the future population can be difficult with several uncertain variables, such as the global stability or instability and demographical movements.

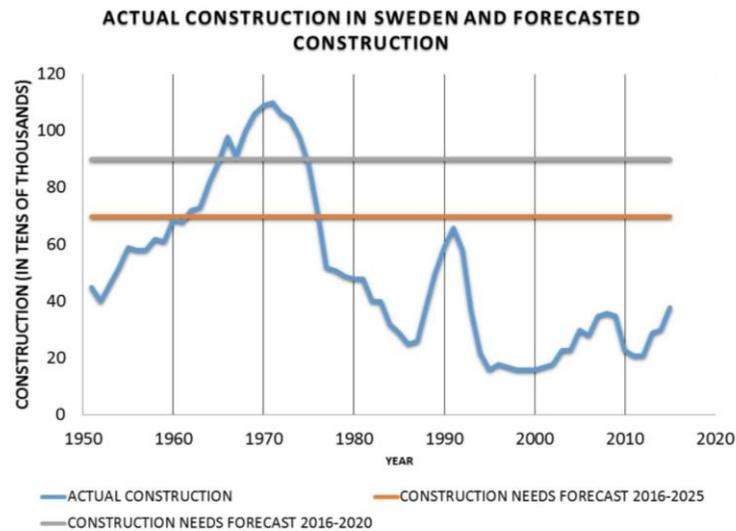


Figure 11 Forecasted housing construction in relation to actual construction in Sweden. Adapted from Boverket (2016).

Due to the housing- and infrastructure shortages, the AEC industry is flourishing (Arbetsförmedlingen, 2016; Boverket, 2016). The situation in the Swedish housing market has given the industry opportunities to expand. However, in order to grow and meet the demands, sufficient amount of resources is needed. According to Arbetsförmedlingen (2016), there is a growing amount of concern within the industry regarding lack of staff and difficulties in recruiting people with the right competences. As illustrated in Figure 12, largest shortages for the coming year can be found among engineers (Arbetsförmedlingen, 2017).

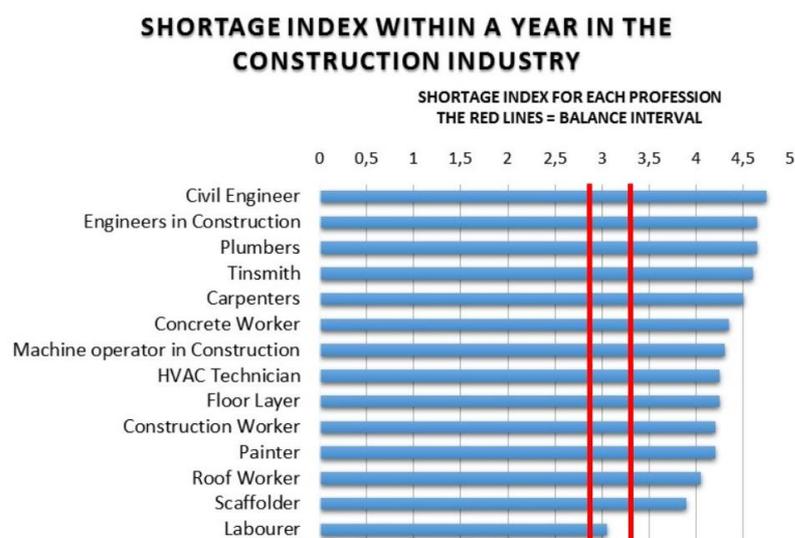


Figure 12 The forecasted shortage of each profession in the construction industry in the coming years. Adapted from Arbetsförmedlingen (2017).

2.8.3 The current and future situation in the Gothenburg region

The city of Gothenburg, Sweden, is currently in an expansive phase - partly as a direct result of the ongoing housing shortages. Aside from this, the city will be celebrating its 400 years jubilee in 2021 (Göteborg 2021, 2017). Consequently, large investments in housing and infrastructure have been planned in the Gothenburg region for the coming years (Göteborg 2021, 2017; Sweco, 2016; Trafikverket, 2016). With several different projects ongoing simultaneously, Business Region Göteborg (2017) and Sweco (2016) suggest that the total investments in the Gothenburg region will reach approximately 750-1000 billion SEK by the year of 2035. That makes the region the largest ongoing urban planning project in the Nordic countries. According to Sweco (2016), Gothenburg's population is estimated to increase with 250.000 inhabitants during this period, meaning that in the Gothenburg region will have approximately 1.3 million inhabitants by 2035.

However, there are some concerns regarding these large investments and the settled project deadlines (Sweco, 2016). Sweco (2016) points out several factors that can mitigate the expansion and slow down the ongoing development. For instance, the construction industry is described to be sensitive to the economic trends in the world. If the global and national economy weakens and become uncertain, politicians consequently become more careful with public investments. This could mean less finance to planned construction projects.

Other issues concern the securing of resources and competences needed to complete the planned projects (Sweco, 2016). Voices within the construction industry question if the industry and the city is equipped enough to meet the expected building expansion. Sweco (2016) also highlights the dilemma regarding that all projects are expected to be built almost simultaneously on a rather small geographical area close to each other. This situation will likely have a huge impact the everyday lives of the citizens in Gothenburg, and on the logistics processes in each project.

2.8.4 Statistics: work-related psychosocial distress in the AEC industry

During the period between September 2015 and August 2016, the construction industry employed around 320.000 people in Sweden (Byggkonjunkturen, 2016). While talking about the construction industry in general terms, it should be pointed out that the sector includes a broad variety of jobs with different characteristics and demographic constellations (Försäkringskassan, 2016c). The majority of the workforce includes craft workers and professionals, but a significant portion can also be found in administration and business.

According to The Social Insurance Agency, the construction industry is one of the largest employing sectors for men, followed by trade, transport, public administration and IT (Försäkringskassan, 2016c). Statistics from Statistics Sweden have shown that physical loads caused by work-related conditions are more common in male-dominated professions, than in female-dominated sectors. This can be explained by the presence of heavy lifting, unpleasant work positions and repetitive movements – which are common in construction work. As has been previously explained, psychological distress is increasing in all sectors, including the construction sector. The following statistics, in Table 1, from The Work Environment Authority displays the share of

employees within the construction industry and three other sectors, which experience some sort of physical or psychological disorder due to occupational conditions.

Table 1 Share of employees with physical or psychological strains. The statistics are from 2014-2016. Adapted from Arbetsmiljöverket (2016).

Share of employees with physical loads or psychological strains caused by work			
<i>Area of industry</i>	<i>All</i>	<i>Men</i>	<i>Women</i>
Construction	24,8%	25,3%	19,1%
Transport	23,0%	21,7%	27,4%
Education	28,4%	22,0%	30,7%
Healthcare & Social Service	28,4%	21,0%	30,2%

As can be seen in the table, almost one in five employees within the construction industry have felt either physical or psychological disorders due to their occupational conditions.

2.8.4.1 Sick leave due to psychological distress in the Swedish construction industry

The rate of absenteeism due to sick leave for a period longer than 14 days, is described to be high in the Swedish construction industry (Byggnadsarbetaren, 2015). Compared to other male-dominated industries, the rates are much higher among men working with craft construction tasks. Physical injuries contribute to a substantial part of these numbers, but absenteeism due to psychological distress is steadily increasing.

Based on a report published by the Swedish Work Environment Authority in 2013, the industry experienced an alarming increase of sick numbers caused by high workload, high work rate and dysfunctional social- and organisational behaviours during 2010-2013 (Byggcheferna, 2014). The development of sick rates caused by psychological distress in the industry is illustrated in Figure 13. In order to distinguish the different branches of the sector, craft men (such as carpenters and construction workers) has been separated from building engineers, civil engineers with master's degrees and architects. What can be stated is that people with higher education levels working in more managing and leading positions tend to experience higher levels of psychological distress than craft men. The rate of sick leave due to this cause is also more common among engineers compared to construction workers.

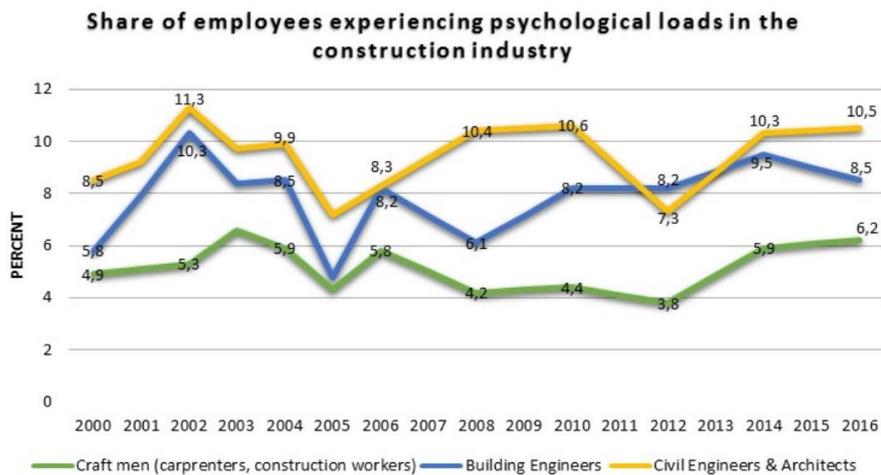


Figure 13 Share of employees experiencing stress and other psychosocial strains in the Swedish construction industry. Adapted from SCB, 2016.

2.9 Summary of theoretical framework

Organisational psychology is a scientific field that seeks to understand the behaviour of individuals and groups working in organisational settings. Occupational Health Psychology is a field within organisational psychology that is applied for the purpose of improving the quality of work-life, health and security for employees. During the 20th century of business- and organisational development, work-life has transformed from being manufacturing based to knowledge- and service based. Occupational psychology has simultaneously taking on a growing humanitarian approach and is today a natural part of organisations' procedures.

Stress is a personal experience caused by pressure or demands. Stress impacts upon the individual's ability to cope with demands and can be either of a positive (*eustress*) or negative (*distress*) nature. *Work-related distress* occurs when employees are put under too high pressure and demand in relation to their resources. The generic perception of work-related distress is that it impacts negatively on employees' performance, as well as their psychical- and psychological well-beings. Work-related distress is triggered by various factors, including *interpersonal stressors*, *role-related stressors*, *task control stressors* and *organisational and physical environment stressors*.

The organisational culture and psychosocial work environment is considered to be of great importance for employees' well-beings. Hostile workplaces and unpleasant cultures are described to contribute to distress. An employee who is put under long-term pressure can become '*burned out*'. The *Burnout syndrome* is a critical physical- and mental condition, characterised by exhaustion, anxiety and increased stress sensitivity. This condition causes sick-leaves, which are costly for both individuals, employers and society. A sick-listed employee is expected to cost a Swedish employer approximately 400.000 SEK in production losses. According to statistics presented by the Swedish Work Environment Authority and The Social Insurance Agency, the levels of work-related psychological distress have increased with around 80% during 2010-2016. This critical development can be identified among both men and women, young and old, in almost every occupational sector. Stress and other psychological disorders are today the most common causes behind work absenteeism.

To reduce workplace stress, organisations can apply preventive actions. Common stress management strategies can for instance include *Primary management* (which suggests that stressors can be reduced either reactively or proactively). *Secondary management* focuses on how individuals can reduce their stress levels through physical training and relaxation, while *Tertiary management* emphasize the process of conducting a plan for return to work after absenteeism related to psychological distress. Organisations, as well as its employees, also have to work actively to achieve a healthy balance between work and private life - so called '*Work-life Balance*' (WLB). In addition to internal policies, organisations have to follow the regulations set by the Swedish Government through different laws. These acts are usually developed and implemented on account of new decisions and guidelines, established by the UN and EU. One example is the new *Sustainability act* which will put pressure on Swedish companies to act more sustainable and keep up to their values.

In 2016, the Swedish AEC industry finds itself in a rather rare situation, where the demands for construction of housings and infrastructure are historically high. According to Boverket (2016), approximately 710.000 new homes need to be built during the period 2016-2025 in order to solve the ongoing housing shortages. According to Business Region Gothenburg (2017) and Sweco (2016), the total investments in the Gothenburg region alone will reach approximately 750-1000 billion SEK by the year of 2035. The situation in the Swedish housing market has given the construction industry opportunities to expand and grow. However, in order to meet the demands, sufficient amount of resources is needed. There is a growing amount of concern within the industry regarding lack of workforce and difficulties in recruiting people with experience and right competences.

3 Empirical Methodology

The purpose of the empirical studies is to examine how the issue of psychological distress is actually approached in today's Swedish construction industry. The empirical process has consisted of a web-based survey examination, as well as an interview study with managers from larger architectural- engineering- and contractor firms based in Sweden.

3.1 Execution and process of the study

The empirical framework consists of two different studies - a web-based survey and a face-to-face interview study with managers from the AEC industry. The choice of only examining managers, and not craft workers, is to receive perspectives from people with valuable experience of staff responsibility and knowledge about Human Resource management. It is reasonable to believe that managers have the insight necessary to be able to answer the empirical questions.

The reason for having both an interview study and a survey study, is to get a broad understanding of the situation on both organisational and individual levels in the AEC industry. There are two approaches to the studies. The web-based survey tries to capture each individual's perspective on their own psychological well-being, their work situation as well as their perception of their organisation. The interview, however, is more aimed at trying to understand each organisation and identifying their actions as well as their views on the issue of staff shortages both from an organisational and holistic perspective. The survey is conducted to receive managers' personal views of work-related psychological distress - enabling us to examine how managers within the AEC industry actually perceive their work environments. The questions in the interview study are more related to the topic of the staff shortages within the industry.

AEC companies were approached already during the autumn semester in 2016. With help from the *Centre for Management of the Built Environment (CMB)* and *Göteborgs Byggmästareförening* ('Gothenburg's union for Building Contractors'), we were able to receive contact details to several Local Business Executives and HR managers within the sector. These people were directly contacted by email and phone and requested to participate in the study. We received a total number of 20 different AEC companies that agreed to take part in the survey study. Aside from the survey, 6 of the companies also participated in the interview study.

When the process of finding participants and constructing questions for each study were finished, the data collection phase took place between 28th of February and 31th of March 2017.

3.2 Web-based survey

Greasley (2008) presents some useful frameworks that can be applied while designing a quantitative study. For instance, Greasley (2008) suggests that a survey should be outlined as simple as possible, meaning formulating question in a way so that they are easy to understand without any room for own interpretations. Too strong words or expressions should be avoided, as this might result in a leading question. One should also avoid having the same type of questions twice. It should be easy to answer the survey and scale questions or box questions can enable the participants be more open-

minded. It is also good to have ‘open questions’ with room for more extensive answers, as this can give a more thorough understanding of the issue. Finally, the more thoughtful a survey has been structured, the easier it is to present relevant data since there is already an idea on what the outcome should present.

Employees from 20 different AEC companies participated in the survey study. 12 of these companies were contractor firms, 7 were consultancies and 1 was an architect firm. Each company were asked to contribute with at least three participants from their organisations. An online-based questionnaire was sent to a total number of 98 managers, including HR-managers, project managers, group managers and local business executives. 85 of these replied back, contributing to a final response rate of 86,7%.

Google forms was used to construct the web-based questionnaire. The survey consisted of 49 questions, including questions about the individual's psychological health, perception of one's work situation and work environment and the view of organisational measures regarding employee's health. Some of the questions required written answers, but most of them were multiple- and scale answer questions (scale 1-7). All the questions in the survey can be find in Appendix 1.

3.3 Interview study

A qualitative study, in this case a semi-structured interview study, gives the possibilities to understand a setting which cannot be displayed in numbers (Burns and Burns, 2008). As Burns and Burns (2008, p. 19) states “*It captures expressive information not conveyed in quantitative data about perceptions, values, needs, feelings, and motivations that underlie behaviours at an individual level*”. Through observing and learning from employees and customers, researchers are given the possibility to understand behaviours that can shed light over quantitative data as well as give an indication for which key variables that can be interesting in future quantitative studies. It is about trying to interpret how people behave in their natural working environment. Furthermore, Burns and Burns (2008) stress the importance of being objective and not interfere too much, as this can jeopardise the reliability of the study. In this thesis, the choice was to use a semi-structured approach where the interviews were partly guided by established questions, but also by supplementary questions along the process. To ensure the reliability of the study, each interview was audiotaped. Burns and Burns (2008) claim that this guarantees that data is captured accurately and completely as it emerge.

The interview study was conducted with nine participants from a total of 6 different companies - 1 architect firm, 2 consultancies firms and 3 contractor companies. The 9 managers participating in the interviews had the following occupational positions in their organisations:

- 1 HR manager
- 3 Project managers
- 1 Group manager
- 4 Local Business executives

The purpose of the interview study was to investigate the Swedish AEC industry's general approach towards the issue of psychological distress and how organisations in the sector attempt to create a sufficient psychosocial work environment for their employees. More specifically, how do different organisations manage workplace stress

and do they apply any preventive actions in order to mitigate workplace stress? Furthermore, the interviews seek to provide an understanding for how the AEC industry and its employees are affected by the current staff shortages and which challenges the sector face due to the ongoing housing-crisis in Sweden.

All the interviews took place at the participants' offices located in the Gothenburg area. We used a prefabricated questionnaire, see Appendix 2, as a guideline to help us to steer the conversations, but our semi-structured interview form also allowed us to go '*outside the box*' and talk more broadly around our topics.

4 Empirical Findings

The following chapter includes the results of both the web-based survey and the interview study. Due to the quantitative nature of the survey, these results are mainly presented as numeric data illustrated in tables and diagrams. The interview study, on the other hand, has a qualitative structure in which the answers from all the participants have been summarized in a coherent text.

4.1 Results of the web-based survey

All the answers from the online-questionnaire were transferred from Google Forms to the predictive analytics software IBM-SPSS, which aids in statistical analysis. Also, the data was transferred to Excel in order to make suitable pie-charts and bar charts. The survey included a total number of 49 questions, and it was sent to 98 different managers from 20 different AEC companies. Of these, 85 managers replied, which results in a response rate of 86,7%. However, some of the questions have been excluded in the IBM-SPSS analysis, due to their structure. Only questions with scale answers (1-7) are included in the analysis. In IBM-SPSS, following steps were made:

1. Use of T-test to calculate Mean values (M) and standard deviation (S.d.), for each of the scale answer questions.
2. Creation of three main parameters, in which many of the questions were categorized.
3. Verification of consistency between the categorized questions in each parameter. Requirement: Alpha >0,75 in order to rule out the possible impact of chance.
4. Investigation of the correlation between the three parameters.
5. Investigation of each parameter in relation to gender and occupational branch.

The categorization of parameters and their alpha-values are illustrated in Table 2.

Table 2 *Categorisation of survey questions according to three different parameters.*

Parameters
<i>Individual indicator: ($\alpha=0.807$)</i> How often do you experience physical loads, such as headache or muscle spasms, in your work-life? How often do you experience physical or mental tiredness in your work-life? How often do you experience sleeping-problems because of your work? Do you experience difficulties to concentrate in your work-life? To what extent do you feel that your job performance is adequate? Do you find it hard to relax in your private life after a day at work? To what extent do you feel stressed? To what extent do you feel irritated at your work?
<i>Work-related indicator: ($\alpha=0.796$)</i> How pleased are you with your current work situation? How do you consider your work environment today? How often do you experience stress in your work? How motivated are you by your work tasks? To what extent do you feel yourself needed by your company? Do you feel that you are given the appreciation you need in your work?

To what extent do you feel support from your colleagues?
 How do you consider your workload?
 To what extent do you consider your workload being balanced?
 To what extent do you think your psychological well-being is connected to your work?
 How do you think your own psychological well-being affects your work performance?
 To what extent do you have the possibilities to affect your current work situation, to improve your ‘Work-life Balance’?

Organisational indicator: ($\alpha=0.910$)

To what extent do you feel that your organisation offers a healthy work environment (related to your own and your co-workers’ psychological well-beings)?
 How pleased are you with your current employer?
 To what extent do you consider your company having a healthy culture?
 To what extent do you have possibilities to talk to your employer about your impression of the work environment?
 To what extent do you consider your company is taking its employees’ psychological health seriously?
 To what degree do you think your employer is taking responsibility for its employees’ psychological well-being?

As can be seen in the table, the examined questions have been grouped into three different parameters: Individual indicator, Work-related indicator and Organisational indicator. The alpha-values, which describes how closely related a set of questions are as a group, are also displayed in the table. Alpha-values > 0.75 indicate a strong relation.

Further, IBM-SPSS was used to examine the correlation between the three parameters. The results from the correlation are shown in Table 3.

Table 3 Pearson Correlation > 0.01 – significant correlation.

Correlation between the parameters				
		Individual indicator:	Work-related indicator:	Organisational indicator:
Individual indicator: ($\alpha=0.807$)	<i>Pearson Correlation</i>	1	-0.598	-0.532
	<i>Significant (2-tailed)</i>		0.000	0.000
	<i>N</i>	85	85	85
Work-related indicator: ($\alpha=0.796$)	<i>Pearson Correlation</i>	-0.598	1	0.745
	<i>Significant (2-tailed)</i>	0.000		0.000
	<i>N</i>	85	85	85
Organisational indicator: ($\alpha=0.910$)	<i>Pearson Correlation</i>	-0.532	0.745	1
	<i>Significant (2-tailed)</i>	0.000	0.000	
	<i>N</i>	85	85	85

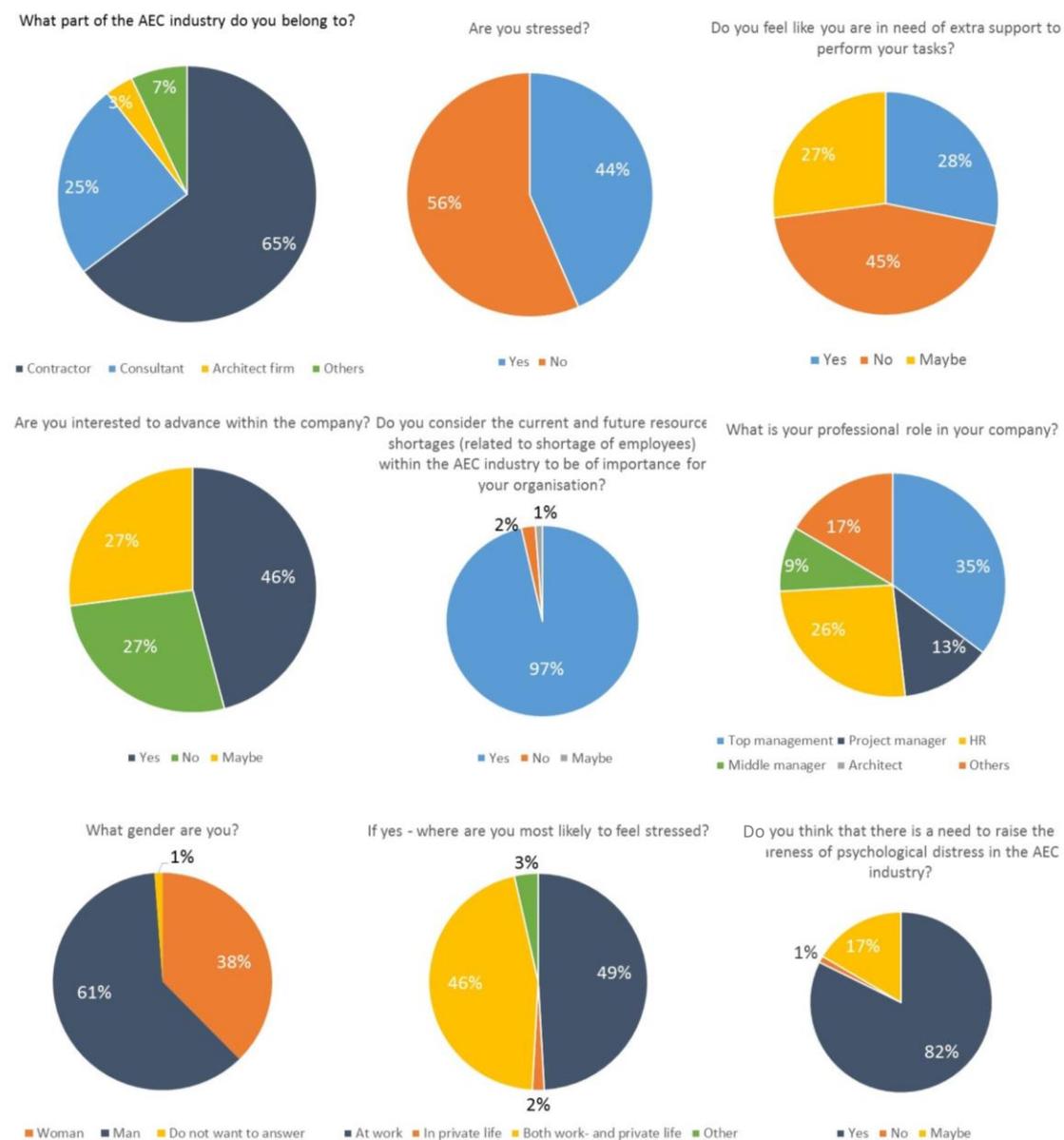
The Pearson Correlations between the three parameters point toward significant correlations between all the parameters, both negative and positive correlations. The Individual indicator is highly depended on the Work-related indicator ($p = -0,598$) which suggest that the employee's’ personal well-beings are strongly affected by their work-related conditions. This picture is also strengthened as there is also a strong correlation between the Individual indicator and the Organisational indicator ($p = -0,532$). The Work-related indicator is strongly depended on the Organisational indicator ($p = 0,745$), which suggest that the employees’ experience of their work situations is related to the Organisational structures.

T-tests in IBM-SPSS was additionally used to examine the various Mean values (M) and Standard deviations (S.d.), for each of the scale answer questions. The results of all these T-test, mean values and S.d. can be found in Appendix 3. The results showed no significant difference between the answers of men and women. Also, no significant differences between answers of contractors, consultants and architects could be identified. The generic result of the test indicates that people have the same opinion as the standard deviation is not remarkably high for each question.

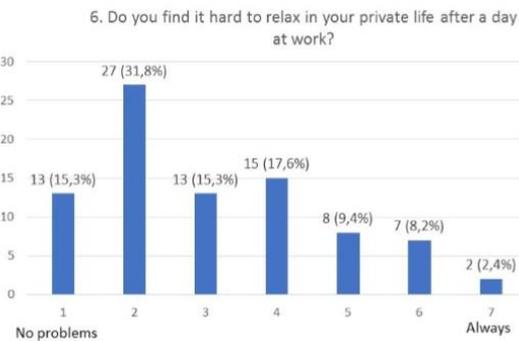
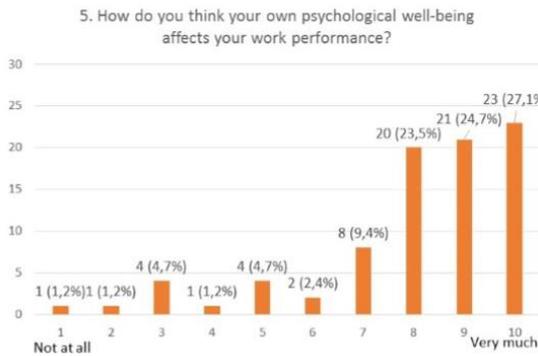
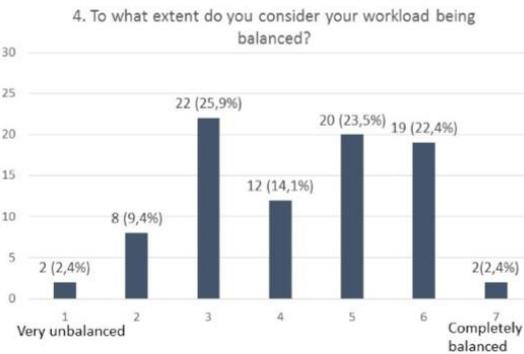
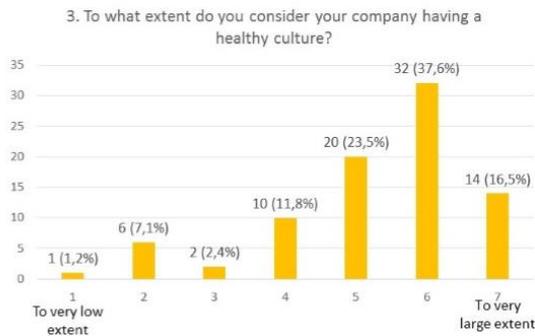
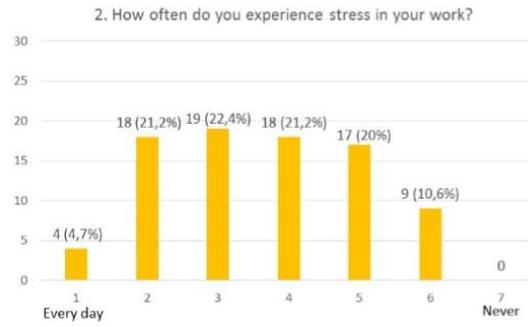
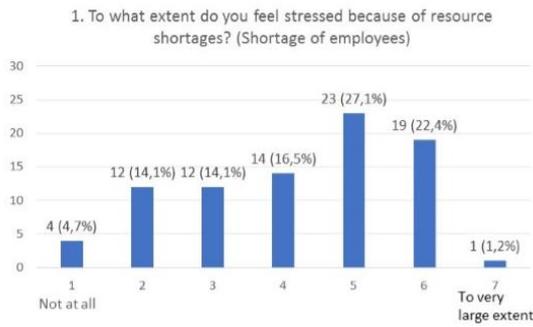
4.1.1 Answers from the questionnaire displayed in diagrams and tables

Some of the questions and their answers from the web-based survey are displayed in the following diagrams in Panel 1-3.

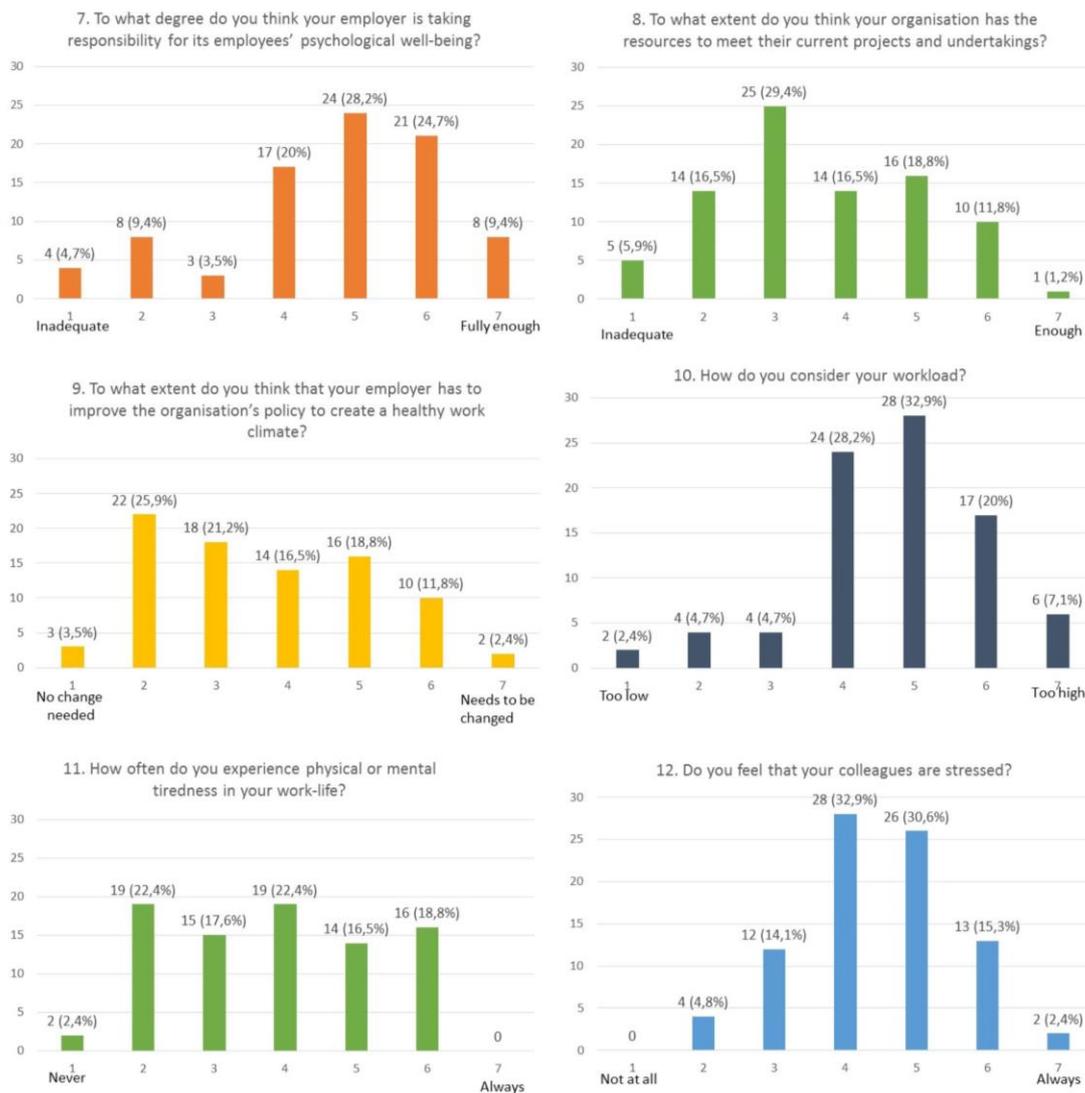
Panel 1 Pie-charts of some of the results from the questionnaire.



Panel 2 Distribution of answers in the scale-questions.



Panel 3 Distribution of answers in the scale-questions.



A further description of the results from each diagram in Panel 2 and 3 is presented below:

1. The answers were very different concerning stress in relation to staff shortages. 50,7% where within the range 5-7 - indicates on a noticeable level of stress connected to the resource shortage.
2. It was a large spread in the opinion on how often people experience stress in their work-life, though it should be noted that the scale was mirrored. No participant answered 'Never' (7), but for the other alternatives (2-6) it was quite equal distributions in the answers. 4,7% say that they are stresses every day and almost half of the participants' experience that they are experience stress quite often.
3. A majority consider that their companies have a healthy work culture. 54,1% have answered 'To a large extent' or 'To a very large extent' (6-7). It should be noted that 10,7% consider that their work culture is not that especially healthy. The optimum would be that no one was within this range.
4. It was a large spread in the view in how people experience their workload being balanced. 24,8% perceive their workload to be close to balanced or completely

balanced. However, there are many people who think that their workload is not that balanced (1-3).

5. A majority considers their psychological well-being to affect their work performance. As many as 75,3% is answered within the range 8-10 which implies on a strong correlation between the psychological well-being and work performance.
6. Most of the participants do not have any considerable issues with relaxing in their private life after a work day, as 62,4% of them lies within the range of 5-7.
7. A considerable amount of the participants considers their organisations not to take sufficient- or full responsibility of their employees' psychological well-being. 62,3% are in the range between 5-7.
8. There is a larger disagreement in the perception whether one's organisation has the resources to complete its current commitments and projects. There is a large spread in the answers and only 13% of the participants consider that their organisation has enough of resources. 51,8% answered within the range of 1-3 and consider their organisation not to have enough resources.
9. There is a large spread in the perception if the employer has to improve its policies to facilitate a healthy work climate. It is almost as many that are positive as negative. 49,5% is in the range 4-7.
10. A majority of the participants consider their workload to be just enough or too high. A total number of 88,2% answered within the range of 4-7, and the majority of these people consider their workload to be a bit too high.
11. It is a large spread regarding the question of people's physical- and mental tiredness in work. An equal distribution of answers in the range of 2-6 points towards periods of tiredness, though it is still manageable.
12. It is a generic belief that one's colleagues are stressed, maybe not all the time, but quite often. 63,5% answered within the range of 4-5, considering their colleagues to be moderately stressed. 17,7% thinks that their co-workers are stressed a lot or all the time.

In one of the questions, the participants were asked to write down the three most common stressors that they experienced in their current work-life. A summary of all stressors that were brought up is illustrated in Table 4.

Table 4 The most common stressors according to the web-based survey.

Common Work-related stressors		
Time pressure: Lack of time, ambitious and short time planes, short deadlines	Pressured economy - tight budgets	Projects divided into different stages
Pressured time plans from clients	Staff shortage	Complex constructions
Short construction periods	Difficulties to find right competences	Following-up and monitoring of subcontractors
Inadequate communication	Long travels	'Too many irons in the fire'
Role ambiguity - role conflicts	High responsibility	Sense of inadequacy
Own high ambitions	No room for margins to be able to slow down	Unforeseen events
Inadequate and bad planning	No control over one's situation	Rapid changes
Lack of foresight - leads to too fast decision-makings	Thin organisations	Designing not finished when construction starts (usually when a building/facility is constructed)

Bad Project management	Bad project structures	Unbalance between young and more experience engineers (generation transition)
Constantly added tasks for Project managers	Attitudes	Bad quality
‘Macho culture’	Male-domination	Expectations
Constant availability - email, phone	Long work days	Insufficient knowledge among newly graduated
The borderless society - conflict between work- and private life	Inexperienced workforce	Unclear division of labour
Short term thinking	Inadequate and undefined leadership	Insufficient knowledge among clients
Inadequate documentation	IT	Lack of concern towards different partners within the industry
High demands on documentation	Low tendering	Requirements from the surroundings
Too much documentation	Incentive wage is demanding	
More administrative tasks	The market conditions	
Unbalanced workload	High competition	
	Many projects	
	Performance requirements	
	Postpone project initiations	
	High workloads	

The last question of the survey was of an ‘open’ nature, in which the participants were allowed to write what they thought about the questionnaire and what they would like to add. In this question, several participants brought up their personal view and suggestions regarding the question about work-related psychological distress in their organisations. The most notable comments have been summarized in Table 5.

Table 5 A selection of comments in the ‘open’ question in the survey.

Open Answers
“There is an increase of employees in the industry who are affected by distress, and the issue is how the organisations shall manage this - “How do we act correctly?”. Distress is a new disease which is hard to understand and at the same time it is very individualistic as different people need different treatments.”
“Even though it has improved I still think there is a culture in this industry that you should work a lot and be available if something unforeseen happens during the evenings, weekends or holidays. I do not think we have that culture in our organisation and my perception is that the industry has improved in general.”
“There is a combination of the employers’ responsibility and the individual responsibility considering creating a healthy WLB. A motivating work climate might contribute to a situation where the signals and not take it seriously.”
“I previously felt ashamed for the fact that I felt bad mentally and did not dare to speak to my boss about it. I did not want to be perceived as weak. Today I talk openly about it, especially with newly graduates. It is not something to be ashamed about, instead it is completely normal to feel this way. Me sharing my experience with the newly graduates have been received positively. It is important for the companies’ to be susceptible to these issues and take it seriously.”
“A noticeable stressor that occurs is when colleagues changes employer, a new must be recruited to replace this person. It takes time to come into an organisation and perform.”
“It should be noted that it is not acceptable to work less or take a time of off if you do not have children. I fought for several years before I could do it, despite me previously having

to take a timeout because of burnout. Also, stress is connected to the presumptions that even though you are sick you should work from home. The jargon in the industry is that people come to the work even if they are sick, because everyone expect it should be that way.”

“Those persons who are sitting in the Top management are from an older generation. To them, psychological distress comes as a chock. When they were young and ‘green’ they did not experience this kind of stress and performance anxiety. The younger generations have higher demands on their self. The Top management in my company have noticed my suggestions and we shall see how it ends.”

“Questions regarding diversity must be raised! It is still a male dominated industry. There is not enough of resources and the industry is mainly interested in one of the gender... If we worked more towards an equal and more distributed work place and I think we must create a better working environment.”

“It needs to be a balance between younger and more experienced. Today the younger employees take too much responsibility in relation to their experience level.”

“It is important to discuss values and organisational culture in the AEC industry - architects need to have more influence, as well as self-esteem! There are a lot of slowness from the authorities and deficiency in the bureaucracy system at the ‘Migrationsverket’ (Swedish Migration Board). We can offer the new arrivals, i.e. refugees, work but we are hindered as the refugees are waiting to get an approval or rejection from the Migrationsverket.”

“We need to get better control over foreign labour when they arrive to projects. A lot of time is wasted to control the employees arriving.”

“Support from The Work Environment Authority should be questioned. Thus, they have completely vanished from the industry... Whom should we turn to when there are issues that does not concern the traditional construction related problems?”

The results from the ‘open’ question suggest that there are concerns for the future within the industry regarding common jargons, attitudes and issues on how to create a more open working environment, in which everyone can feel safe and included. According to the participants, the industry is still being mainly male-dominated. The participants also mention that the society is changing, contributing to new and different conditions and possibilities today compared to those of the older generations. The issue of distress is described to be common among younger, often due to youngers’ high demands on themselves. However, the answers suggest that it seem to be an interest of breaking old habits and discuss the cultural values within the industry.

4.2 Results of the interview study

When all the interviews were conducted, we selected the most relevant information through colour coding. Three main topics (stressors, organisational measures and resource shortages) could be identified and the results of the interviews are presented in accordance to these topics.

According to the interviewees the issue of psychological distress is currently given more attention in the Swedish construction industry. From barley, having been discussed ten years ago, work-related psychological distress is today a highly discussed topic for contractor firms, consultants and architects. However, according to some of the participants in the interview study, the topic is to some extent still taboo and the industry is still partly in the awakening phase of dealing with the issue. The general

perception of the interviews, however, indicates that companies are currently becoming aware of the importance of investing in employees' psychological health.

4.2.1 Common stressors in today's construction organisations

The causes behind employees' psychosocial well-beings are complex and highly influenced by personal and social factors in both private life and work-life. All participants in the study agree that the causes behind distress in the modern work-life contains a combination of various internal and external factors. According to one project manager, private and work-related factors dependently affect each other. For instance, stressors in private life might affect performance in work-life and vice versa. Some of the most common stressors that were brought up during the interviews are summarised in Table 6.

Table 6 *The most common stressors according to the interviewees.*

Common stressors according to the participants in the interviews		
Trend in the Swedish society - performance based	Difficulties to manage WLB	'Knowledge Transfer Gap'
Starting and raising families	The new 'borderless' work-life	Role conflicts: changing occupational roles
Having too much to do	Digitalization	New laws: changes in the Work Environment act
Having too little to do	Lack of time	
High ambitions	Lack of monetary resource	Other recruitments from authorities
Lack of professional knowledge	Lack of manpower	Increased requirements from clients
Lack of work-life experience	Increased administration	Internal policies and demands
Unawareness of one's own limitations	High workload	Incorrect deliveries
Insufficient communication between subcontractors	'Growing Piles'	Poorly written documents
	Power-distance between Top Management and local units	Difficulties to say 'No'

In order to understand which factors that trigger stress in work-life, one has to look at the current societal development. A common opinion among the interviewees, is that the Swedish society and its citizens' lifestyles have successively become more performance based. People do not only want to achieve good results at work, but also perform well in their private and social lives. The phenomenon is particularly recognised among younger employees in ages 25-45. Many of these are also in the process of starting and raising families, which might contribute to increased demands and stress-levels.

Some of the participants point out that stress is highly individual and multidimensional. For instance, some employees become stressed by having too much to do while others are stressed by having too few tasks. It is important to differentiate the stressors for

younger employees from the ones among older and more experience employees. According to the interviewees, it is today more common to see younger employees become *'burned out'*. Younger employees are mainly stressed by their own high ambitions - ambitions that might contradict with their lack of knowledge and work-life experience. They want to perform and prove themselves, and also have difficulties to recognise their own limitations. This is illustrated by one interviewed Human Resource Manager:

"Some people do not dare to say 'no' in time, they probably want to show that they are good and willing to contribute and perform. If their managers have lot of things on their own plates, they might not find the time to speak to their employees, making it hard to discover critical signals".

Other interviewees confirm that this is indeed the case in their organisations. If employees notice that their colleagues are stressed and overloaded, they might try to deal with the tasks themselves instead of asking for help. The consequences of not knowing one's limitations result in higher workloads and increased stress-levels. The situation can become even more strained due to colleagues' inability to react to one's stress says one project manager:

"If you do not know your limitations and keep accepting everything you are commanded, your surrounding colleagues will sooner get used to it. There is a risk that they keep command more and more tasks to an already overloaded employee. The burden just continues to grow".

However, another project manager points out that stress also can be good, as long as it does not overreach its optimum point. He continues:

"People tend to manage stressful periods pretty well, as long as they know that they are temporary. But it becomes dangerous when you cannot see an end to your situation – that is when people are 'burned out'... []... it is not dangerous to reach your optimum level, as long as it is decreasing shortly after. The problem in the recent year is that you are constantly balancing on your peak level - without any signs of declines. You become exhausted".

Many employees, young and old, also struggle to find a healthy balance between private - and work-life. The digitalisation and establishment of ICT has created a more flexible style of work, for better and for worse. It has enabled people to work from home, but also erased the old borders between private life and work-life. The ability to work around the clock and bring work home, which many ambitious people do, puts higher demands on individuals to create a sufficient balance between professional tasks and personal needs. The interviewees insist that it can be quite difficult to balance these factors and that the modern *'borderless'* work-life contributes to new challenges and increased stress-levels.

Older employees, compared to younger ones, are better at recognising their limitations and delegating tasks. However, according to the interviews older employees are more stressed by digitalisation, time- and monetary shortages. They might have long-term experience and valuable knowledge to perform their tasks, but these employees experience severe stress due to lack of resources, high workloads and inability to keep up with their commitments. One of the project managers illustrates the problematic situation as followed:

"Many employees become stressed by seeing their "piles just getting higher". They simply cannot keep to their commitments. For instance, one might have 10 commitments

scheduled in the morning, but at the end of the day these have increased to 15 or 20 instead. Despite having executed all things that were planned from the beginning, the workload is continuing to grow. One has a responsibility to delegate tasks and balance one's own work-load, but we can see that several middle managers are put under enormous pressure”.

All of the participants in the interview study express their concerns about the current staff shortages in the Swedish construction industry. The market is particularly favourable at the moment, but the interviewees agree that the industry is in need of an extended workforce in order to meet the demands. They suggest that the resource shortages are critical contributors to the increased workloads on today's managers. The heavy workloads make it harder to control and execute tasks, and increases the levels of stress and other psychological strains.

Many of the interviewees also point toward a critical '*Knowledge transfer gap*' between younger and older employees, in which the more experienced employees are put under high demands due to their professional knowledge. Since the construction industry in Sweden lacks resources, especially of experienced people, these groups are highly coveted on the market. The experienced ones are currently given too much to handle in relation to their time available. They would need support with the help of younger co-workers. However, the growing group of younger and less experienced employees in the industry (often recruited directly after university studies) are in need of guidance and training. Unfortunately, many older find that they do not have time enough to teach and share their knowledge with the younger employees. Instead, many of these are given too much to handle in relation to their competences.

Another dimension of stressors is the changing occupational roles, particularly for middle managers and site-managers. Several of the interviewees highlight the role conflicts that these managers are experiencing in today's work-life. Previously, the main mission for these managers used to be monitoring the production, site and execution of projects. Today, many are dealing with additionally administrative tasks simultaneously. The decommissioning of secretaries, as well as the development of new technologies, has contributed to an increasing number of obligations for middle managers. The role conflicts, role-ambiguities and expanded workloads are expected to put managers under additional pressure than before - or as one project manager expresses it:

“... middle managers today are expected to be superheroes”.

In addition, many of the interviews point out the increased pressure of new laws and internal organisational policies as common stressors. New national regulations, such as the changes in the Work Environment Act, have put higher demand on companies to work actively to conform to their employees' well-beings and report on their procedures. The regulations are needed, the interviews say, but they might also contribute to stress along with the many other additional requirements from authorities and clients. One project manager also reflects on the growing ambitions from the organisation's own Top management. According to the manager, Top managers constantly develop new internal policies and ambitious plans in order to make the organisation's procedures more effective. These policies are then “pushed down” from the headquarters to the local units in the organisation - contributing to even higher pressure on already strained regions and local offices. The headquarters are often located in Stockholm and the local offices in the rest of Sweden have to adjust to these decisions. However, the ambitious restructuring plans, according to the interviewed

manager, are not always particularly well grounded with the reality that local units face in their regions and there is a growing concern regarding the increased centralisation within the industry.

4.2.2 Organisational measures to prevent workplace stress

The participants recognise a remarkable difference in the AEC-industry's approach towards psychological distress today as compared to 10-25 years ago. Back then, organisations' health-and safety policies mainly concerned mitigations of physical loads, while psychological strains were more or less previewed as a sign of weakness. One of the participants, who have been working in the industry since 1977, explains that the construction sector used to have (and to some extent still has) a rather strong '*Entrepreneurial- and Macho culture*' in which working hard and for as many hours as possible was previewed as an unspoken rule. Another participant explains that is still common that people want to work a lot, that it is a part of the strong hierarchical culture. Working many hours is still previewed as something good and few people want to be perceived as weak. Fortunately, this cultural approach has switched to some extent. One of the interviewees says that the atmosphere today is more gently and it has become more acceptable to ask people about their psychological well-beings. This is partly explained by the younger generation's more open-minded approach, the increased involvement of Human Resource Management and establishment of new political and organisational guidelines regarding psychosocial work-health. There is, however, a general perception among the interviewees that organisations can do more and that further improvements regarding questions of employees' psychological health are needed.

So, which policies do the AEC organisations apply in order to mitigate psychological distress among their employees? The participants in the interview study have only been able to reflect on their own organisations' preventive measures. Some of the most common actions are summarised in Table 7. It should be noted, however, that this is a summary of measurements by the different AEC companies - not a generic action plan.

Table 7 Examples of organisational measures among the interviewed organisations.

Examples of common organisational measures
<i>Routines for a healthy work place [Action plans to prevent distress]:</i>
A more open-minded approach towards issues of psychosocial work environment
Larger investments in employee health – long-term benefits
Focus on values. Important to practice them (honesty, trust, respect and being ambitious)
Larger focus on social sustainability
Some companies have a group of people that arranges activities each month
Employee surveys and employee dialogues
Occupational healthcare
“Structure-courses” – important for the employees to have the possibility to learn how to structure their work.
In-service training in stress handling
Directive on discussions
Guidelines in stress management for the employees

Possibility to talk to a professional about your psychological health, for instance Previa
Prevent bad attitudes within cultures – try to create transparency and an open work environment where everyone is able ask for help when they have too much work
Work to increase diversity, e.g. gender, cultural background and academic background.
Improve the process of validating the knowledge from people coming to Sweden, integration programmes.
Being adaptable to changes in the Work Environment Act – Inform how the company is working to improve their policies
Employee responsibility – everyone has a responsibility to plan their work and to draw the line

Routines for manning and executing projects:

Attempts of sufficient manning in projects - sometimes however, restricted by budget and manpower-shortages
'Checklists' before project initiation. Risk-analysis with focus, not only on physical hazards, but also specifically on psychological hazards
Executives' descriptions, defining exact responsibilities and power of a certain role.
Some consulting firms use 'Team-building' in their projects. Employees work in pair of two in each project. Try to match senior managers with Junior managers.
'Sponsor-programs' to welcome and teach newly graduated
Modernisation of certain occupational roles are needed (e.g. the role conflicts of middle-managers)

Management's influence and responsibility:

The importance of sufficient leadership and division of labour.
Managers are responsible for securing sufficient and healthy work environments. Important that Group managers follow up on employees' well-beings and balance of workloads.
Managers must have knowledge about stress, burnout and psychological ill-health.
The leadership-climate has changed significantly during the last 40 years. From transactional to transformational. Less hierarchy and formality, more flat organisations.
Managers need more time to lead and inspire
Human Resource Management is a rather new phenomenon in organisations - rare 20-30 years ago, but today a natural part of management.
HR-managers also work with work-environmental issues.
The larger a company grows, the more supporting functions are needed.

Different mind-sets and conditions between larger and smaller companies:

Larger companies can offer more supporting functions compared to smaller companies
Larger companies usually have an established Human Resource department
Smaller companies can attract employees through sign-in bonuses, high-salary and different kinds of benefits. However, with these benefits comes a higher responsibility which can cause risks of being overloaded.
While larger firms cannot compete with smaller firms on salaries, larger companies try to market themselves with health care policies and other offers that are of value for the employee, e.g. occupational health care agreements.

Larger organisations suffer a risk of becoming too bureaucratic and static. Difficult to reshape the organisation

As can be seen in the table, several of the interviewees suggest that companies in the industry approach the topic of psychological health differently depending on their size, resources and priorities. It is a common view that larger firms can offer a larger number of supporting functions, compared to smaller firms. Larger firms benefit from often having established Human Resource departments, as well as other corporate health care functions. While they cannot compete with smaller firms on salaries, larger firms try to market themselves with their health care policies and other offers that are of value for the employees - such as sufficient working terms. According to personal experience by some of the participants, smaller firms cannot always offer their employees sufficient resources in relation to their commitments.

All the participants highlight the importance of good leadership. It is the responsibility of managers to secure employees well-being at work and prevent work-related psychosocial distress. However, leaders must also be given the time to manage and lead others. If managers struggle with too intense workload and too many tasks at the same time, they might not find time nor energy to catch up on critical signals from their surroundings. Knowledge about stress, according to several of the interviewees, is the key in order to work proactively with organisational measures. If the employees themselves lack knowledge about stress and stress management, then leaders must be able to step in and take action. One project manager says:

“My benefit is that I have been given a lot of knowledge about stress and burnout. I have seen people who have become ‘burned out’, I have had rehabilitation calls with these people, I have been taking part of their process of struggling back to work after sick-leave. I have also participated in ‘stress-courses’, so I am aware of the dangers”.

The interviewees state that their organisations are required to adapt to the recent changes in the Swedish Work Environment Act (i.e. the *Sustainability act*). Not only are organisations forced to work with social sustainability, but most companies today are willing to invest largely in their employees’ health to regain long-term benefits. The concept of ‘*Work-life Balance*’ is highly promoted by many companies and work-environmental questions are today a competing factor within the industry. As one project manager points out:

“It is about creating a healthy and welcoming culture. Previously, it used to be an advantage to work a lot, but today it is more meritorious to have a functioning ‘Work-life Balance’. The balance is created by the culture”.

According to the participants, many AEC organisations have developed action plans and uses regular employee surveys and performance reviews to follow up on employees’ well-beings. One interviewee explains that employees at his company are assigned with forms to learn how act under pressure, and that managers have taken courses on how to manage stress at workplaces. The AEC organisations’ increased investments in employee health care can be explained as a result of the ongoing societal development - including the rising levels of stress and sick leaves caused by psychological disorders. Companies have to work proactively to avoid losing valuable workforce. If an experienced manager fall sick, the organisation loses approximately 1 million SEK in sales. However, the general statistics suggest that the number of sick-leaves in the industry are surprisingly low. According to one project manager, there is a potential risk that these statistics are misleading. The manager suggest that it is to some extent a common cultural approach that managers use their vacations and

overtime hours for recovery rather than report on sick leave when they are experiencing distress.

4.2.3 Approaches towards staff shortages in the AEC industry

The largest concern expressed by the interviewees is the difficulty to recruit new employees, especially people with previous experience of working in the construction industry. The difficulties are to large extent related to the ongoing building boom in Sweden. One of the participants states that:

“There are several large projects planned. In order to man these large projects, and at the same time retain the local market, our company has to expand and double its turnover rate until 2020”.

The issue of recruiting people, though, is rather complex. There is large number of graduates from different universities in Sweden at the moment. However, most of these graduates lack practical experience since internships are not a compulsory part of their education. This creates a ‘*Catch 22*’ situation, in which companies are in desperate need of workforce but unfortunately lack resources to introduce enough graduates into their business. Instead, companies prefer to hire people with some years of work-life experience and these people are hard to find. The situation has contributed to a shortage of experienced staff in the industry and the available resources are, ironically, mainly newly graduates. Some of the interviewees say that they have to think outside ‘*the box*’ and use other available resources in order to meet the current demands, for instance: increased integration of refugees, establishment of own schools and integration of practice in education. The participants also state that there will be an increase of foreign companies taking place at the Swedish construction market.

The number of housings that are planned to be built in Sweden in the coming years are almost as many as in the previous ‘*The Million Programme*’. The situation might seem pleasant for the construction industry as the project availability on the market is remarkably good, but it creates a lot of concerns as well - or as one interviewee says:

“Moderate amount is always best, as we say in Sweden. Though, it is rare to have a situation where things are just the right amount”.

How come then, that Sweden is facing the same housing crisis now as in the 1970’s? The interviewees point toward the two major recessions between the 1970’s and today, which have impacted largely on the current construction-and resource shortages. The recession in the 1990’s in specific was a huge blow for the construction industry, as many people lost their jobs. One of the participants explains that those who were fired due to the recession had to look to other industries for jobs, e.g. the assembly- and car industry. After the recession, the construction sector slowly recovered. But people chose to stay in the other industries. The consequences of these movements are showed today in terms of employee shortages in the construction industry. There is a shortage of experienced project managers, since many of these were lost in the recession - creating a generation gap in the construction workforce.

Recessions, however, do not provide the whole explanation. Another factor that impacts on the construction industry is the domestic and international political climate. One of the interviewees expresses his concerns:

“The Swedish government does not govern anymore! It was different in the past. Back then, politicians reassured that everything could not be planned and built

simultaneously. We did not build hospitals when there was a huge need for housings at the same time. That is not the case today when they want us to build everything simultaneously. ...[] ...it is has become a crazy situation! Everyone is building - and they are doing it everywhere”.

The interviewees point out that the industry today is highly dependent on foreign labour. Changes in the international political climate could have severe impacts on the future of the Swedish construction sector. One participant states:

“It could be that we are currently watching the fall of the European Union (EU). ...[] ...but it is the free movement of labour that facilitates the possibilities for companies from other countries to come here to work”.

Many of the interviewees state that will not possible to build everything that is planned. If the building pace continuous without a decrease it is possible that the prices will increase and the quality will suffer. Another scenario would be that there is attenuation of construction, possibly another recession, which mean that many projects are delayed.

The participants suggest that the current staff shortages are most alarming for contractors. However, every organisation is affected by stress and shortages in its own particularly way. Many of the participants say that psychological distress might not be a critical problem in their own organisations, but they point towards problems for other actors in the industry. The picture behind the causes of organisational stress look different for different players.

4.3 Criticism and comparison between the empirical studies

One must keep in mind that the structure of the two empirical studies are different. The quantitative survey has captured an individual perspective with the participant's views on their own psychological well-being, their work situation and perception of their organisation. In the qualitative interview study, however, the aim has instead been to understand each organisation's holistic view regarding the issue of work-related stress and resource shortages in the Swedish construction industry. In the interviews, we have also sought to investigate how the different organisations act specifically to mitigate workplace stress.

The different structures of the studies could have impacted on our results. The survey study was a web-based questionnaire and included questions of a more personal nature. It also involved far more participants than the interview study. These factors could possibly have enabled the participants to answer with greater honesty. The high quantity of replies in the survey also provides us with a broader range of perspectives to analyse. The interviewees, on the other hand, might have been more reserved with their answers and more focused on presenting a selling picture of their companies. These managers were both asked to answer our questions honestly, but had at the same time to act as representatives of their organisation in a face-to-face meeting. It is likely to believe that the results of the interviews became slightly less objective and more bias compared to the answers of the web-survey. It could also have been difficult for the interviewees to provide a general overview of the situation in the industry and the organisation, as their views are mainly based on perceptions of other employees' attitudes and behaviours.

The survey included participants from a broad range of occupational fields within the industry, however, a majority of these were contractors. Among the interviewees, the division between contractors, consultants and architects were more equal. In contrast to the interviews where 7 out of 9 participants were men, the survey included a larger amount of women (38%). A potential risk with the web-based surveys, is that we as students have not been able to choose our participants. Instead, we have had to rely on our contact persons at each company. These managers were directly contacted by phone and they were responsible for forwarding the questionnaire to their employees and colleagues. By doing so, we cannot be certain that the following employees were carefully chosen to answer in a specific way, or if they were randomly picked.

5 Analysis and Discussion

What can be generally stated by analysing the results from the empirical studies is that the current situation in the industry is far from optimal. On one hand, the participants in the web-based survey seem to be generally pleased with their organisations' culture, and a majority believes that their employer is taking responsibility for the employees' well-beings. However, a substantial amount of the managers (44%) feel stressed and there is a general perception that one's colleagues are stressed as well. Many of the survey results showed a widespread distribution of answers. This points towards a disparate view among our participants, and it is difficult to find a general conclusion in many of the questions. We can see that our empirical results correspond quite well to the perception that stress is a highly individual and multidimensional experience. McShane and Travaglione (2007) stated that work-related stress occurs due to a variety of interpersonal, roll-related, task-related and organisational stressors. When we analyse the results, we cannot exclude the individual differences and external stressors that our participants might have as well. The long lists of different work-related stressors presented in the results confirm that work-related stress is indeed a very complex phenomenon, just like McShane and Travaglione (2007) and Palmer, Cooper and Thomas (2001) illustrated in the theory in Figure 5 and Figure 6.

There were no significant differences in the answers between men and women. The men and women who participated in our web-based survey, were managers and tended to have a rather common approach towards the questions they were given, whether the questions concerned their personal experience of stress or the perception of their organisation. The equal distribution between the answers are quite surprising, given the thought that statistics from Arbetsmiljöverket (2016) clearly suggest that women in general experience more work-related stress and psychological strains compared to men.

A clear majority of the participants in the web-based survey suggested that there is a need to raise the awareness of psychological distress even more in the construction industry, confirming that the issue is far from perfectly approached. This view was also shared by all of the managers in our interview study when they stated that many AEC organisations, despite already working actively with the issue, need to do much more.

5.1 Psychological distress in the Swedish construction industry

The results from the web-based survey showed a large spread in how the participating managers experience stress, seen in Panel 2, Diagrams 2. The fact that 44% of all participants said that they were stressed, and that the distribution of answers in range 2-5 were so equal cannot be ignored. Even though the results suggested that psychological distress was not such a substantial and commonly widespread issue as we had first thought, we still feel that the outcomes of the survey should raise concerns. The perception that we have been given from the interview study is that psychological distress has become a more common issue in many AEC organisations over the last years. If this is the case, then the empirical results seem to correspond well to the general statistical development regarding increased work-related distress provided by Arbetsmiljöverket (2016) in chapter 2.5.

5.1.1 Different perceptions about stress-levels and causes behind stress

A very interesting aspect from the survey was that many of the stressed participants suggested that their work situation was the main cause of their stress. 46% of the participants said that their stress came from a combination of factors from work-and private life, but even more participants (49%) stated their work alone was the main cause. The Pearson Correlation consisting of our three parameters (individual indicator, work-related indicator and organisational indicator), showed that all correlations were significant which indicated that the individual perceptions were closely related to work-related factors and organisational factors.

Many of the interviewed managers emphasised the large impact of private factors, stating that psychological distress is almost always caused by a combination of work-and private life. However, the result of the web-based survey indicated that work-life factors actually have a higher impact on the stress levels, than the interviewees think. Why were the perceptions between the interviewees and the participants in the survey so different? The most likely explanation, according to us, is that people in the survey gave their answers based on their personal beliefs and experiences, while our interviewees based their views on general perceptions of the employees' well-beings. Does this inconsistency in views indicate a considerable lack of understanding regarding the actual situation of distress in the Swedish AEC industry?

5.1.2 The identified stressors – what do they tell us?

Our results suggested that managers in today's AEC organisations face many different stressors. But what do these stressors actually tell us? Let us examine the most common stressors by studying them according to the theoretical model of McShane and Travaglione (2007), Figure 5.

In both empirical studies, the participants were requested to mention the stressors that they thought were the most common in their work or within their organisation. The answers turned out to be quite unanimous. Many of the managers seem to be affected by *time pressure* (short deadlines), *tight budgets*, *insufficient project planning*, and the occurrence of *unforeseen events* in projects. This did not come as a surprise, since these factors are commonly considered to be the pillars of every project, referred to as the '*Iron Triangle*' (PMI, 2008). Managing a project is always a balancing act between these parameters. As was mentioned by Brittain², the construction industry is typically recognised as a project-based industry. However, the interesting part is that it seems like the stress levels in today's AEC organisations have intensified. Has it become harder to balance the parameters of the '*Iron Triangle*' and why?

We believe that the most reasonable explanation to why so many participants highlighted these stressors is the current staff shortages on today's AEC market. The view that we have been given during the interviews is that today's organisations are pressured to manage a unique situation, in which the availability of projects is remarkably high but so is also the demand for staff. This view corresponds well with the reports from Arbetsförmedlingen (2017) which highlighted critical shortage indexes for almost every construction-related profession in the coming years. We will return to the issue of staff shortages in section 5.2.

First, we would like to focus on some of the other stressors that were frequently mentioned in the results. It is our belief that the issues of *tight schedules*, *budgets* and *bad planning* are not just results of staff shortages. They might also be influenced by many of the following work-related stressors stated below. We would like to refer back to Palmer, Cooper and Thomas (2001) in the theory, and perceive the following stressors as potential hazards. We will also try to categorise them according to the model by McShane and Travaglione (2007) in Figure 5.

- ***Increased workloads and demands - Task control stressors.*** Our interviews suggest that the workloads among today's managers in the AEC industries are high. In the results from the web-based survey, we can see that the outcome corresponds to this perception. The majority of the participants (88,2%) have answered within the range 4-7 on the scale, suggesting that their workloads are overwhelmingly higher than average. According to the participants in the interview study, it also seems like the workloads have intensified. The perception of "*piles that are just getting higher*", sense of inadequacy and inability to keep to one's commitments should raise alarms. It seems like even though many managers are working hard, their calendars are constantly getting filled with new additional tasks. It is highly reasonable to believe that the strained workloads contribute to feelings of time-constraints and increased stress-levels.
- ***Role ambiguities and Role conflicts among managers - Role-related stressors.*** It was found in the survey that some of the employees expressed an uncertainty regarding their actual work requirements and work responsibilities. In the interview study, role ambiguity was mainly addressed to middle managers e.g. site managers and foremen. Our interviewees told us that the site manager role has changed remarkably over the last 20 years. From mainly having focused on coordinating the construction site and execution of projects, new requirements have made the site manager's role significantly more administration oriented. The phenomena is recognised among other occupational groups in the industry as well. The additional administrative tasks for managers is likely to be a result of the decommissioning of traditional secretaries. When the administrative professions and supporting functions are dismantled in an organisation, the responsibility for documentation is partly transferred to managers. Digitalisation have partly enabled this development, but the decommissioning of administrative support can also be viewed as a way for organisations to save money. As a result, managers of today's AEC organisation do not only face role ambiguities, but role conflicts as well since they have to manage their traditional tasks simultaneously along the tasks which were previously handled by secretaries.
- ***Increased documentation and adjustment to new regulations - Task control and organisational environment stressors.*** We choose to see the additional administrative tasks as possible contributors to role conflicts and role-ambiguities among managers. However, the increased documentation itself is actually a *task control* and *organisational environment* stressor. As some of our participants have expressed, administration is closely related to the internal organisational policies, as well as external regulations and requirements from clients and Swedish authorities. For instance, the new addition in the Work Environment Act, regarding corporate reporting on sustainability and diversity

(chapter 2.7.1.3) came into practice recently. This new law puts pressure on companies to act more sustainable and present a report each year regarding the consequences of its business in questions concerning environment, social conditions and employee health.

Even though actions like this new law is important, we can partly understand why some companies might feel pressured by these regulations. We think that it is not the regulation itself that is the issue, rather the fact that it feels like all new restrictions, laws and demands are currently put into action simultaneously. These actions are implemented in a period where AEC organisations are already working under high pressure. The impression is that the additional regulations are sometimes perceived as loads instead of necessary measures. The increased requirements on documentation overshadow the potential benefits. Though, one should keep in mind that many of these actions serve an important purpose and are highly needed in the industry. They should be seen as welcoming rather than harming.

- ***Knowledge transfer gap - Task control and organisational environment stressors.*** One stressor that was frequently mentioned in both interviews and survey, was the so called '*Knowledge transfer gap*' within the Swedish AEC industry. There is an unbalance between younger and older experienced employees. Before writing our master thesis, we knew that there was a lack of experienced employees in the AEC industry. This view had been given to us already during our Bachelor. However, we had not quite realised how severe the consequences of having too few experienced employees actually were. Despite the good economy and favourable market conditions, we have discovered a crucial bottleneck that raises concerns.

What we have discovered is a '*Catch 22*' situation, in which organisations hesitate to recruit newly graduated i.e. *Millennials*, as there are too few senior managers who can guide and teach them. The experienced senior managers are highly coveted on the AEC market due to their vital professional experience. They could probably share much of their knowledge with newly graduated. However, since there are so few senior managers available, many of these managers are today working under difficult time constraints and heavy workloads. They do not have time to help the younger employees, but would rather need support themselves. Due to these conditions, younger and less experienced employees are not given the support they need in order to manage their work efficiently. The vital knowledge is not transferred properly from seniors to Millennials. What happens then, is that the younger employees might have to take more responsibility and advance faster in relation to their competences. This in turn causes distress and feelings of inadequacy among many younger.

Since several AEC organisations today lack resources to bring in graduates, they preferably seek to hire people with some years of professional experience instead. But, as we recently discussed, many companies are struggling to find experienced employees on today's market. The '*Catch 22*' situation forces companies to take on newly graduates as they are the only available.

- ***Power Distance - An organisational and physical environment stressor.*** The top-down approach in the construction industry has several bottlenecks. The interviews indicated that a lot of ideas and ambitions at the top management level do not permeate the whole organisation. It is reasonable to believe that this type of *Power Distance*, which exist within the organisational structure itself, can be a crucial contributor to the increased stress levels.

When the distance between the decision-makers and executors becomes too wide, both geographically and structurally, some employees might feel powerless in their positions. This is exactly what was expressed by one of our interviewees in the empirical study, when he stated that the larger AEC organisations today have become too centralised. He reflected on the fact that more and more important decisions are being taken at the headquarters, often situated in Stockholm, and that the geographical and structural distances reduce the local independency for regional departments. The local units, for instance here in Gothenburg, have to adjust to the centralised decisions. However, according to the interviewee, Top Managers at the headquarters do not always understand the local market or the challenges that the local units might face. When the central decisions are pushed down to the local departments, they might be perceived as yet another demand in an already strained local organisation. The pressure that internal regulations and demands create might unfortunately result in decisions getting stuck at the regional levels between top management and production.

As we see it, the risk with too much centralisation is that the decisions taken by Top Management are not properly implemented. It is disturbing to hear that internal policies, which are supposed to serve a good purpose, might actually have a counterproductive effect. However, we also believe that the view of centralisation as a stressor might be reinforced by the current market situation in today's construction industry. With so many projects ongoing, aligned with the reports on intensified workloads and staff shortages, it is likely to suspect that employees direct their dissatisfaction towards their own organisation. The centralised concept has its benefits, though in order for it to work properly, sufficient and regular communication between the units are needed, as well as cooperation, support functions, clear guidelines and humbleness.

5.1.3 Are there any other explanations behind the stress-levels?

Our empirical studies indicate that there could be even more explanations behind the increased stress levels.

5.1.3.1 Difficulties to say 'no'

According to our interviewees, many of the employees have difficulties to recognise their own limitations and say 'no' in time when being under pressure. Especially the younger generation is described to have very high ambitions. Participants in the web-based survey stated that younger employees today put higher demands on themselves compared to previous generations. This together with the fact that many younger sometimes are required to perform too many or too advanced tasks in relation to their competence, is likely to contribute to distress. The high ambitions and unwillingness to say 'no' could be a reaction to the common attitude in today's Swedish society. Not

only should people perform successfully at their work, but preferably also in their private lives. The information age with constant connectivity and social media provides us with impressions and ideas on how to behave, look and what to achieve in life. It is difficult not to be affected by these general perceptions, especially as they seem to be a part of the general assumptions in today's society.

5.1.3.2 The new challenges in today's work-life

Today's society offers new and challenging aspects for modern work-life. Swedish business and work-life has transformed over the years from heavy manufacturing to become mainly knowledge based services. This has partly been enabled by the development and adaptation of ICT in work-life, as older and traditional procedures have become digitalised. It was evident in our empirical studies that several of today's managers (often senior managers) feel stressed regarding the increased digitalisation of work. As we understand it, it has today become much more difficult to distinguishing work-life from private life. The influences of digitalisation and 24-hour connectivity have changed the way in which people live their lives and conduct their work. A consequence of the new technology is that people's work-lives have become more flexible, for better and for worse. On one hand, connectivity creates freedom and allow people to adjust some of their work on their own conditions. On the other hand, drawing the limits between private and work has become harder. It requires self-discipline, but many employers and employees seem to experience difficulties with adapting to the new modern world. This was made clear during the interviewees, as almost every participant highlighted the importance of '*Work-life Balance*'.

5.1.4 Which are the consequences of distress in the industry?

One of our interviewed managers even stated that employees generally manage their stress well, as long as they know that the situation is temporary. The problem in the recent year, however, seems to be that many employees are constantly balancing on their peak levels. With this aspect in mind, it becomes natural to look back at the '*stress-curve*' which highlighted the different stages of performance and demand. What will happen if employees are constantly balancing on their optimum levels and their demands are increasing at the same time? It is likely to believe that people's job-performances will be negatively affected, with reduced efficiency and alertness, and increased levels of tiredness and anxiety. It is reasonable to think that this will in turn contribute to a hostile work environment. A hostile work environment is partly characterised by organisational ineffectiveness and ill-health. Our suspicions and theory are confirmed by the participants in the web-based survey, as they verify that there is a strong relation between their individual mental well-being and their work performances.

As has been noted, being distressed and put under high demands for a long time can eventually make an employee '*burned-out*'. Now, the interviewees all agree that this is indeed a very critical both for the affected individual, as well as for their organisations. Hellekant (2014) stated that one sick-listed employee could cost around 400.000 SEK for an employer. However, according to our interviewees, the costs can actually be much higher. For example, an experienced project manager who leaves an organisation, because of sick leave or simply for another job, is estimated to cost the company over 1 million SEK. Aside from that, valuable knowledge is lost. It should in other words be

in every organisations interest to take the issues of distress and high workloads seriously, in order to reduce the risk of employee burnout.

According to the journal Byggcheferna (2014), the construction industry experienced a rising level of sick leaves during 2011-2013 caused by organisational- and psychological issues. With background of the increased numbers of psychiatric diagnoses among Swedish employees in general presented by Försäkringskassan (2016b), it was reasonable to believe that the rates would have reached new heights also in the construction sector. Interestingly though, the participants in our interview study did not share this view. According to them, sick rates were generally low in their organisations. However, one manager suggested that the low numbers could actually be misleading, since many AEC managers do not report on sick days. Instead, it is common to use overtime hours or vacations. One could question whether the low sick numbers are related to a cultural approach within the industry? It was commonly stated during the interviews that managers in the industry often work hard and for many hours. Is this phenomena perhaps a symptom of the *Espoused belief and values* and *Basic Underlying Assumptions* within the industry (Schein, 2010)?

5.2 Staff shortages – how did the industry end up in today’s situation

The Swedish construction industry is currently experiencing an extraordinary and flourishing market situation, which is confirmed by the participants in our interview study. The amount of investments that is currently put into housing- and infrastructure projects are enormous. According to Boverket (2016), approximately 710.000 new homes need to be built during the period 2016-2025, a number that can only be compared to the ‘*The Million Programme*’ project back in the 1970’s. Due to the current housing situation, availability of projects and stable Swedish economy one would assume that this is the perfect opportunity for AEC organisations to grow and for newly graduates to enter the industry. But is it really that simple?

The answer to that question is ‘*Not quite*’. Sweden might face alarming housing shortages, but the construction industry is simultaneously struggling with serious staff shortages. This is a troubling equation with two negative variables. As we discussed previously many of today’s AEC organisations are short of experienced people. The staff shortages seem to be so severe, that many of our interviewees said that their companies have to turn down projects as they cannot man them sufficiently. A majority of our survey participants said that they felt stressed because of the staff shortages. We could also see that many participants doubted that their organisations had enough resources to keep their commitments. So, the AEC industry is screaming for experienced employees, but there are too few of them on the market. This in turn, creates bottlenecks for recruiting new graduates. Why have the staff shortages occurred in the first place?

In order to explain the staff shortages, we have to look back at Figure 11 in Chapter 2.8. The figure illustrates the development of new construction in Sweden since the 1950’s. The graph follows the shape of a sine- and cosine curve with different amplitudes during different time periods. The interesting with these observations are the substantial decreases in construction during the 1970’s and 1990’s, which was caused by two big crises in the construction and real estate industries. Two of the interviewees explained these crises to be signified by high unemployment as many people in the construction

industry lost their jobs. Many of them who lost their jobs never returned to the construction sector. This could explain why there is a gap of experienced people (particularly senior managers). The staff shortages we experience today is in other words a consequence of previous historical crises.

However, staff shortages do not explain why we have an enormous housing crisis in Sweden today. This crisis, we suggest, have largely been created by insufficient governing. One of our interviewees stated that during a 30-year period, too little has been built in relation to the Swedish population growth. The different Swedish governments during these years have not shared a consistent view on how to govern long-term sustainable housing and construction politics. Instead, the politics have switched frequently depending on which political parties that have ruled the country. Another factor, that has been more or less unforeseen, is the development of more and more 'single-homes' in Sweden. Many family constellations today look quite different compared to before, with fewer people living together and more Swedes living on their own. This requires more housings than previously. Also, in world of increasing globalization people tend to move to the bigger cities. In Sweden, this has led to an increased demand for housings and infrastructure, particularly in the Stockholm, Gothenburg and Malmö areas. What can be assumed, shortly, is that Swedish politicians have not taken sufficient proactive actions to prevent the housing shortages, and the consequences can be seen today.

5.3 Organisational measures and the impact of culture

By analysing our empirical results, we have been able to identify some of the common reactive and proactive measures that are applied in today's construction industry. However, we ask ourselves whether these measures are enough to overcome the issue of psychological distress and investigate the impact of organisational values, beliefs and traditions.

5.3.1 How are the AEC organisations approaching workplace stress?

According to the results from the interviews, it seems like many of today's Swedish AEC companies are already applying several different measures to prevent and mitigate workplace stress. The interviewees also suggested that the stigmatisation regarding the issue of psychological distress have been reduced over the years. It is of course very welcoming to see that the organisations seem to be aware of the issue. We assume that some of the organisational measures might be responses to the societal development of increased levels of psychological distress and diagnoses (Arbetsmiljöverket, 2016 and Försäkringskassan, 2014b). Since psychological distress today is previewed more or less as a public health disease in Sweden, it would be irresponsible for the construction sector not to react and develop proactive measures. Even if the interviewees agreed that the construction industry in general could still do better, the picture given was that at least their organisations did enough. But what did the participants in the web-based survey think?

Blaug, Kenyon and Lekhi (2010) stated that many organisations are focusing a lot on reactive solutions towards distress rather than proactive measures. The reactive solutions focus on how individuals themselves can mitigate and manage their issues with distress, usually through secondary approaches such as training and meditation. What the organisations do is just to present the possible actions which their employees

can adapt. By analysing our interview results in Table 7, we can see that the participating organisations are offering many typically reactive solutions, for instance *group activities*, *'structure-courses'*, *in-service training in stress management*, *stress guidelines* and *accessibility to professional help, e.g. therapy*. However, we can also see that the companies apply several proactive measures as well, such as *working with values*, *diversity*, *attitudes*, *team-building*, *'sponsor-programs'*, *employee surveys* and *employee dialogs*.

However, the issue as we see it is not that the Swedish AEC organisations present too few examples of measures. The real difficulty, which we discovered in the web-based survey, seems to be to go from words to action. Most of the measures highlighted in Table 7 are good examples on how to prevent, reduce and mitigate workplace stress. Though, in order for them to have any actual effect they must be implemented properly. As we can see in Panel 3, Diagram 9 there seems to be a disagreement among the managers in the survey study whether they feel that their organisation's policy regarding work climate needs to be improved or not. The widespread share of answers indicates that there is a need to increase the understanding regarding the subject, and probably reform some of the already established procedures in the organisations. The results from the *'open answers'* also suggest that there are in fact several things that can be improved within the industry, not least within issues regarding the organisational structure and culture.

The results call for a deeper analysis of the actual work environment and climate within the Swedish construction industry. Blaug, Kenyon and Lekhi (2010) suggested that it is easier for organisations to apply a reactive approach rather than a proactive approach, since proactive measures require substantial organisational effort, time and money. However, with background of everything that we have discussed so far, we would like to question if the presented proactive measures are fully implemented and if not, what is stopping them from being so? Can all the identified stressors in our studies be simply explained by staff shortages and external societal influences? Or are they strained by other issues within the very inner core of the construction industry culture?

5.3.2 The vital impact of organisational culture in the construction sector

It is reasonable to believe that the current staff shortages within the Swedish construction industry have a large impact on the increased workloads among AEC managers. The staff shortages can also be directly linked to the issue of *'Knowledge transfer gap'*, as this gap has occurred due to an unbalance between experienced seniors and newly graduates.

However, staff shortages do not necessarily explain the issues of role conflicts, role ambiguities, Power Distance and attitudes. As we suggested, these phenomena can be perceived as *role-related* and *organisational-and physical environment stressors*. Our perception is that these might be largely influenced by cultural aspects within the organisations. We therefore find it necessary to examine the impacts of the general organisational culture in the construction industry, particularly on the contractor side. Can the organisational culture itself contribute to today's work-related distress and does the culture hamper the abilities to change and innovate?

In chapter 2.6 about Organisational Culture, Clegg, Kornberger and Pitsis (2011) together with Schein (2010) highlighted the power of cultures and their impacts on its

members' shared values, assumptions and beliefs. According to the authors, the second and third layer of a culture, *Espoused Beliefs and Values* and *Basic Underlying Assumptions*, heavenly shape the way in which the employees think and feel in relation to certain problems within the organisation. Our generic impression of the construction industry, is that the commonly traditional and hierarchical structures point towards a presence of a strong organisational culture. This view is also shared by Dainty, Green and Bagihole (2007). According to Clegg, Kornberger and Pitsis (2011) the strong culture makes the behaviours of the employees more predictable and less variable. This is because its members often share a common mind-set. With these aspects in mind it could be assumed that, for instance, the similar answers of men and women in the web-survey is more a result of a common cultural approach within the industry, and has less to do with differences between the genders.

5.3.2.1 The culture of working hard

Some of the participants in our empirical studies stated that there is a culture of 'working hard and for many hours' in the AEC industry. It is not uncommon to bring the job home and work during evenings and weekends. Could this type of behaviour be an example of the unspoken norms or invisible features as a part of the industry's *Espoused Beliefs and Values*? Or is the phenomenon even deeper rooted within the *Basic underlying assumptions*, a tacit force that governs the employees' behaviours?

By analysing the results from the pie-charts, one could ask if there is perhaps a correspondence between the number of people stating that they did not need extra support in their work, and the amount of people who wanted to advance within their organisation. In Panel 1, we noticed that the distribution of answers in the two questions are almost identical. 45% said that they do not consider themselves being in need of any extra support and 46% of the participants would like to advance within the company. Could this indicate that there is a cultural approach within the industry, in which people see working hard and independent as necessary in order to be able to advance? Maybe working hard is just a part of the strong culture's 'we have always done this way' attitude, and is therefore perceived as a common and natural behaviour? Either how, it is not unlikely to assume that hard-working culture itself is a hidden contributor to distress, especially when it is combined with factors such as high workloads.

5.3.2.2 The 'Macho culture'

By analysing our empirical results, it seems like the Swedish construction industry is still to large extent male-dominated. This seems to be particularly true for the contractor firms. The male-domination could be perceived as a contributor to a strong '*Macho culture*' within the industry (Dainty, Green and Bagilhole, 2007). We believe that the long-term tradition including a majority of older white men working in the business might have established a homogeneity, both regarding mind-sets and from a demographical point of view. The existing perception of the industry as a '*Macho culture*' probably makes it unattractive for many women, men and Millennials.

The Swedish government has appointed an investigation on how the AEC industry should be able to meet the goals of new construction until 2025 (Regeringskansliet, 2016b). Among the result is a request to manage the issue of the '*Macho culture*'. There is also a recurrent debate about the issue in several construction journals. Sjöström (2016), for instance, says that even if things are progressing slowly in the right direction, the industry is still struggling with old traditional norms.

5.3.2.3 How the organisational culture itself hampers development

Much of employee's attitudes and behaviours can be linked to the organisational culture. However, changing the fundamentals of an organisation's culture can be quite difficult. Our impression is that many Swedish AEC organisations are very interested in marketing their values, beliefs and measures, for instance through their web sites and during recruiting events at universities. By analysing their web sites, one get the impression that all the AEC organisations sounds very much alike. For a critical eye, though, these ambitious actions might be perceived more or less as organisational *Artifacts*. The question is if these values are permeated throughout every organisational level in reality? It is easy to say that values and measures exist, but the real challenge is to actually follow these up and implement them into the *Espoused Beliefs and Values* and *Basic Underlying Assumptions* of the culture.

From our point of view, the Swedish AEC organisations can still be perceived as rather hierarchical and conservative. Despite the marketing, our study has not given us the impression that the construction industry is particularly agile, i.e. fast adaptable to changes. During our education, we have learned that larger organisations are likely to include several different subcultures. Subcultures, according to Schein (2010), are groups within the organisation which have established their own frameworks, language and rules. The subcultures are often harmless, though, they can sometimes become countercultures that actually slows down the organisations as a whole. The existence of traditional subcultures could be a possible explanation why there still exists a so called '*Macho culture*' and certain jargons within the construction industry. However, we do not believe that this culture is as present on the Top management levels as for instance in the local and production units. We suspect that managers on the higher levels in the organisational structure experience very different jargons, compared to other units on lower levels. The managers in the top, who also design, develop and decide on the company's' guidelines and procedures, are probably more willing and adaptable to changes in some questions. Though, creating a unified organisational culture where everyone share the same perspective is challenging. In order to make this possible, the core values of each individual will have to be changed. To change the *Basic Underlying Assumptions* of the construction industry would require massive efforts and is not something that can be easily done through ambitious advertising. As Clegg, Kornberger and Pitsis (2011) stated, the disadvantages with strong cultures is that its homogeneity prevents innovation and accustoms employees to do things in certain ways without questioning. We therefore suspect that some of the decision and actions taken by Top managers get stuck in the hierarchical structures, and are thereby not permeated through the organisation as a whole.

It is our belief that the presence of subcultures and *Power Distance* within the construction industry, together with its overall conservative structure contributes to certain bottlenecks that hamper the ability for changes. An example of this could be the issue of recruiting new people into the business. When we listen to our interviewees, they all express their concerns of being short of experienced employees. These are the most needed and requested on today's market. This view is confirmed by the companies' web sites as a majority of all recruit ads mainly ask for people with at least 2-10 years practical and professional experience. This approach makes it very difficult for young and inexperienced graduates to enter the market, since they often lack the practical experience. However, once a graduate actually enters the industry, there are often clear career patterns in which the employees are recommended to follow in order to gain competence and advance within the company - particularly in contractor firms.

It often starts with a role as foreman, supporting a site manager. The next step is to become site manager oneself, before advancing any further. This traditional way of doing things might have its points, but is it really reasonable to believe that companies, during the current circumstances, will be able to meet their staff shortages if every new employee has to follow this path? What we are asking is if this is the fastest and only way to recruit people into the business? It is obvious that AEC organisations find it more attractive to recruit experienced employees, since it takes shorter time to integrate them into business. However, maybe it is time to face the reality that these experienced managers are simply too few on the market. No magical spell will make the supply of them greater than the current demand.

Perhaps, AEC organisations must try to find new ways of attracting and recruiting people, and abandon their traditional approaches on who to take in and which patterns these must follow. There is a risk that some AEC organisations get stuck in their own patterns and seek to work as they always have done. During the current circumstances of alarming housing- and staff shortages, traditional approaches becomes bottlenecks that slows down rather than favours development. This is very much a question about culture, as changing the way of running the business also means changing the very essence of the organisation. Adaptability, according to the values of today's societal environment, will never emerge if organisations do not do it full heartedly.

5.4 Our suggestions on solutions – what should AEC organisations do?

We believe that in today's modern work-life, where the all the changes in our surroundings happen faster due to globalisation and digitalisation, the importance of speed and adaptability is probably greater than ever. Automatisation and ICT has cleared the way for a growing service-and knowledge based labour market. Organisations have become more transformational in their structures and ways of managing businesses. When the market conditions switch faster, so must also the companies' responses. Reactive measures, however, will not be enough - the proactive actions must also speed up.

In some sense the AEC industry has to, just like several other industries, accept that the societal changes come with new and challenging demands. Instead of complaining of over old habits, the industry should accept the situation and focus on the future ahead as there are infinite possibilities. The demands, for instance, include an extended focus on sustainability - not only from an environmental and economic perspective, but from a social point as view as well. The view and stigmatisation surrounding the issue of psychosocial distress has to change, both in society and within the work-life. Psychological distress must be perceived as a topic that everyone can feel safe to talk and discuss about, without risking being judged as weak or inadequate. We personally welcome our participating companies' more openly minded approach towards workplace distress, and encourage them to continue their work with improving their psychosocial work environments. We emphasise the importance of larger AEC companies act as role models and use their brands to inspire other organisations to follow their lead. However, we can also see some possible improvements for AEC organisations when it comes to mitigating the current stress levels and improve the work climate. We will do our best to present them in the following section.

5.4.1 The importance of leadership in stress management

When it comes to implementing stress management strategies overall, we think that it is important to have leaders that can facilitate an environment where everyone feel seen and involved in the organisational community. It is important that the employees share a common holistic view and can relate to the organisational goals. There must be zero tolerance towards bullying, harassments and other dysfunctional behaviours at the workplace. Furthermore, how managers perceive each employee's role is highly important, as it is the manager's responsibility to make sure that the employees are qualified for their tasks and able to fulfil them.

Our perception from the interviews is that a vital part of the responsibility for stress management lies with the managers in charge. These are the ones who should inform their employees and colleagues on how their organisation perceives stress and what kind of stress management actions that are available. However, in order to act as leaders in this question, managers must of course be given the time and resources to lead. According to some of our participants, many AEC managers are today pressured by high workloads and resource shortages and this could possibly affect their ability to catch up on critical signals in their surroundings. It is highly important to be aware of signals of psychological distress and act too soon rather than too late. Based on our interviews, it almost feels like organisations sometimes rely too much on managers and their individual responsibilities. Aside from intense workloads, some manager experience role conflicts and role ambiguities due to increased administrative tasks and others might not have the sufficient knowledge, right tools and training within the field of stress management.

Shuttleworth (2004) emphasises the importance of training connected to '*managing pressure*' applied in organisations. '*Managing pressure*' can have positive effects on employees, as they become able to control their stress levels more efficiently. Further, Shuttleworth (2004) argues that organisations must establish their own policies which shall concern every organisational member, both managers and workers. He also highlights the need of organised seminars, discussions and reviews on employee-health, in which every employee should be given the possibility to take part of. These events should be accompanied by professionals in order to get valid inputs and recommendations. However, Shuttleworth's (2004) approach seems to be missing in parts of today's AEC industry. According to our interviewees, stress management courses have so far only been offered to selected managers, and not to the employees. This means that not everyone is included within the process, which is a crucial factor in order for the stress management strategies to be fully implemented.

5.4.2 The need of '*Work-life Balance*'

A subject which emerged frequently in the empirical studies, as well in the theory, was the importance of '*Work-life Balance*'. WLB concerns how people manage and balance the distinction between their work-life and private life. Today people are struggling with having the perfect career combined with the perfect private life. In some sense, the pressure from the modern society have got many people defining themselves by their achievements. Further, ICT and 24-hour connectivity have erased the previous borders between work- and private life - making it even harder to establish a healthy WLB. With these aspects in mind, we find it welcoming to see that the Swedish government have installed actions to put pressure on organisations to work more sustainable. Not only are organisations forced to work with social sustainability, but most companies are today willing to invest largely in their employees' health to regain long-term

benefits. The concept of WLB is highly promoted by many companies and work-environmental questions are today a competing factor within the industry. As one project manager points out:

“It’s about creating a healthy and welcoming culture. Previously, it used to be an advantage to work a lot, but today it is more meritorious to have a functioning ‘Work-life Balance’. The balance is created by the culture”.

The individual employee has certainly also a responsibility to manage a balance between work and free time. Though, with the help of a proactive organisational culture, it is even more likely to achieve WLB.

Referring back to the importance of sufficient leadership, we find it concerning that some managers in the empirical studies express distress due to heavy workload burdens. This could suggest that people within the Swedish AEC industries are to some extent struggling to create a healthy balance. If managers, who are supposed to act as role models, cannot balance their own workloads and private issues efficiently, the risk is that the needs of other employees within the organisation are neglected. This, in turn could result in lower organisational efficiency as the performance levels decreases. It is in other words crucial to have a culture that promotes and enables employees to create WLB. A recent example of a country which is taking active measures to create WLB within its labour market is France. Back in 2016, France took the issue to a national level and introduced a new law which states that organisations cannot force their employees to read their emails, answer their phones and work outside their actual work time (The Guardian, 2016). It will be very interestingly to see whether other countries will follow France’s example. The French regulation could possibly inspire certain organisations to achieve a more pleasant and productive culture for their employees. Organisations must also convince their employees that it is okay to say ‘no’ and ask for help when burdens and balance become too difficult manage.

5.4.3 Increase the diversity within the industry

Furthermore, it is not only about creating WLB but also to create a diverse organisation, in which people want to work and develop in. We believe that this is the key in order to overcome old cultural norms, become more innovative and start progressing according to the current societal changes. As previously mentioned, Sjöström (2016) discussed a slow progression to a more diversified AEC industry. But how can the diversity within the sector increase even more? According to Sjöström (2016), in order to increase women’s interest to work within the business, several different criterias must be taken into consideration e.g. clearly stated career paths, paternity leave, respect and support, changed mind-sets and attitudes, reduce ‘Macho culture’ and increased recruit from different businesses. Sjöström (2016) also suggests that men in general must stop overestimate their abilities and that women must stop underestimates themselves.

But more women in the industry is simply not enough. The industry needs to attract Millennials and integrate foreign born labour through validation of their professional competences. As was stated in the theory, the younger generation today does not share the same views and values as the older generations. Younger highly values factors such as work climate, transformational leadership, WLB, diversity, sustainability and abilities for personal growth. If the working climate is not supportive and open-minded enough, Millennials are not afraid to look to other organisations or industries, which is a view that we as Millennial students can confirm.

5.4.4 Our idea on how to approach the staff shortages and cultural issues

Our empirical studies indicate that there exists a serious situation of role conflicts among many of the managers in today's AEC industries. From our point of view the causes behind this are a combination of increased administrative tasks and lack of support, but also a result of too slow adaptation of changes within the organisational structures and cultures. We believe that in order to efficiently meet and manage the current demand on the market, AEC organisations must try to find new ways of approaching the staff shortages. By breaking norms and challenging traditional structures, we strongly believe that the industry can take some important steps in the right direction. It is time to change perspective regarding the shortages, accept the situation and instead of complaining over inexperienced graduates ask oneself: “*How can the coming generation become our long-term solution?*”

The way we see it, there are two possible solutions on how to overcome the role conflicts that many managers experience today. One way is applying an agile approach, change the work requirement descriptions and adapt the traditional occupational roles according to the current working climate within the construction industry. It is not reasonable that managers shall keep stuck to all their traditional demands and work tasks, aligned with new parallel roles as well. Especially not if no additional support is installed. If administrative tasks are added, then something else within the role has to be delegated. The role ambiguities and conflicts become particularly visible during the current circumstances of staff shortages and construction boom.

Another solution would be to implement a ‘*supportive role*’ that focuses more on the administrative tasks, so that the leaders are given more time to focus on leadership and project managers are given more time to manage projects. This solution might not be the cheapest or less risky to apply, but if implemented properly it could potentially mitigate role stressors, integrate more people into the industry and in the long run contribute to a more open and healthy organisational culture. Let us explain how.

What we are suggesting is not a reintroduction of traditional secretaries. Instead, we think that this ‘*supportive role*’ should be offered to newly graduates with little or no previous construction experience. During a temporary period of time, for instance one year, the newly graduate takes on the administrative duties and helps an older and more experienced manager with documentation and project support (potentially managers with at least 10 years professional experience). The pair constellation of one experienced and one inexperienced employee opens up for a knowledge transition between the parties, and the newly graduate will not have to take on role that is too advanced in relation to his or her capabilities. The ‘*supportive role*’ should be seen as a meritorious position as the graduate gets a chance to gain valuable knowledge and be thoroughly introduced to the company and the industry. Furthermore, the graduate probably has attributes that are resourceful for the organisation as well. For instance, people of the younger generation are generally very good at working with ICT. They are also fast learners and could thereby reduce some of the work burden for the older employees. We believe that this would help to reduce many of the role-related stressors.

By investing in ‘*supportive roles*’ for graduates, more and more people will eventually become integrated within the industry. Aside from these actions, we encourage AEC companies to work actively to integrate foreign born labour with previous professional experience into the business. The investment is likely to be repaid in the long run, as the amount of experienced staff increases. We also believe that these measures would

increase the diversity within the industry, both demographically and when it comes to mind-sets. It is not unlikely to assume that the integration of more Millennials into the sector will eventually help AEC organisations to overcome many of the old cultural values. As we have discussed previously, Millennials have very different mind-sets compared to the older generations. Their view on '*Work-life Balance*', sustainability, equality and flexibility will probably have a substantial impact on how AEC industries organise and execute their business - forcing them to adapt faster to the changing societal surroundings and changing the *Basic Underlying Assumptions*, attitudes and beliefs within the inner core of the culture. Instead of Millennials adapting to traditional organisational procedures, we think that the organisations will more likely have to adapt to the Millennials. They are, how you like it or not, the future workforce.

However, we understand that these presented measures are costly and challenging to implement in practice. A common problem today also, is that many companies do not want to hire too many employees and risk becoming overstaffed if the market conditions should eventually decline. The investments certainly have to align with the company's business plan and calculations. Though, with the current housing shortages in mind, combined with the strong Swedish economy and the ambitious investments in the infrastructure market for the coming years, we think that this would actually be the perfect time for AEC companies to invest in change. What might have been perceived as costly today, could eventually repay in the future. Tackling the resource shortages with norm-breaking and proactive actions would mean less workload and hopefully mitigated stress levels. It also gives the organisations a possibility to take on more projects and change the traditional cultural assumptions within the industry, making it even more attractive for young people. Change will always be associated with risks, but considering the current circumstances, we would once again suggest that the best time to change the construction industry's traditional mind-sets is now.

6 Conclusion

The following chapter includes our final concluding remarks based on the theoretical and empirical content of this master thesis. With support of our results, analysis and discussion, it is now time to look back on our research questions from the Introduction chapter. We will try to summarise the most distinctive features of the study and our recommendations on future research.

6.1 Our research questions – can they be answered?

In the Introduction chapter, we stated our three main research questions. These questions have then guided us through our structure of the empirical studies, results and discussions. The questions were:

- 1. Do Swedish construction companies experience issues of workplace stress and psychological strains among their employees? (If they do, which are the most common stressors among their employees)?*
- 2. How is the current staff shortages affecting the demands, work climate and stress levels for managers in Swedish construction organisations? (Are there any links between staff shortages and work-related psychological distress in the industry)?*
- 3. What can organisations do in order to mitigate the risks of psychological distress at the workplace? (Are there already any supporting functions in today's construction organisations to deal with the issue? Which corrective and preventive actions can be applied)?*

Based on the results from the two empirical studies, we can conclude that workplace stress and psychosocial strains are indeed present in today's Swedish construction industry. Even if our results did not show that the issue of distress was such a widespread phenomenon as we had suspected, it was still expressed that by 44% of our participating AEC managers that they were feeling stressed. These numbers are too high to ignore. It also seems like the stress-levels within the industry have intensified in the last years. However, work-related stress is perceived differently for different employees. It is a highly individual and multidimensional experience that depends on external and individual factors combined with work-related stressors. Some of the most common stressors which were mentioned in our studies were *tight time-schedules, tight budgets, insufficient project planning, high workloads, role ambiguity and role conflicts, requirements on documentation and adjustment to external regulations, knowledge transfer gap and organisational Power Distance*. Several stressors can be linked to the current staff shortages within the Swedish AEC industry, while others are strained by existing structures within organisational cultures.

The current staff shortages within the AEC industries (particularly shortage of experienced employees) are alarming. Several of our participants in the empirical studies express their concerns of not being able to recruit people with the competences they are looking for. Combined with the favourable market conditions for the Swedish construction industry and a record high of ongoing projects, the shortages are likely to

contribute in intensified workloads for people working within AEC companies. High workloads are suggested to have negative impacts on employee's psychological well-beings and work performances. Long-term pressure can eventually create feelings of inadequacy and exhaustion, and in worst case scenario make people '*burned out*'. The shortage of older experienced managers has also created a '*Knowledge transfer gap*' within the industry, with an unbalance between seniors and juniors. The unbalance contributes to increased demands on seniors, as they have the requested experience and must take on more tasks, but also pressure on younger employees as they are given a greater responsibility in relation to their competences. Consequently, staff shortages is suggested to contribute to a more strained and hostile psychosocial working climate.

In order to prevent and mitigate the issue of work-related distress, AEC organisations can apply both reactive and proactive measures. Our studies show that many of today's AEC companies are aware of psychological distress and understand the importance of having a healthy work environment. Examples of reactive measures that exist today are *group activities*, '*structure-courses*', *in-service training in stress management*, *stress guidelines* and *accessibility to professional help, e.g. therapy*. The proactive measures that exist include *working with values*, *diversity*, *attitudes*, *team-building*, '*sponsor-programs*', *employee surveys* and *employee dialogs*.

Even though our participants state that the industry is still in its awakening phase when it comes to working actively with the issue of psychological distress, it is welcoming to see that the attitude towards distress seems to have become more open. However, the construction industry still has a long way to go and the measures we see today will probably not be enough to overcome the problem as a whole. Our survey results suggest that the real challenge is to go from word to action. In order to create an attractive and healthy work environment, one has to investigate the root cause of the issues and implement proactive measures in the very inner core of the organisational culture. It is not enough to simply promote ambitions and values as superficial *Artifacts*. In order for the measures to have any effect, they must be integrated into the *Basic Underlying Assumptions* within the culture. Otherwise, the culture itself risks becoming a crucial bottleneck in the process of change.

Changing mind-sets is not easy, but necessary. With background of our empirical results, we believe that the industry must continue to work actively to change attitudes and conservative norms and find new ways of recruiting people into the business. Making the industry more attractive for women and Millennials, and integrating people with foreign education is important to secure future staff resources. Increased diversity and more focus on '*Work-life Balance*' is also likely to contribute to a more healthy and welcoming psychosocial work environment within the sector. Our suggestion is to establish a '*supportive*' and administrative role, which can be taken on by newly graduates who want to be a part of the industry. In this '*supportive role*', the inexperienced graduate could help to support an experienced employee by reducing some of the workload regarding administrative tasks. By these means, the experienced managers can focus more on actual managing and the graduate receives vital training and introduction to the company. This creates a 'win-win' situation. The inflow of younger people with modern mind-sets might in turn enable AEC companies to adapt faster to today's increasingly flexible society and market conditions. Millennials' view on '*Work-life Balance*' is also likely to change the cultural values and beliefs within the sector in the long perspective.

6.2 General reflections on the thesis and suggestions for future research

The thesis provides a general overview on how employees and companies within the Swedish AEC industry experience and approach the issue of work-related distress. Even if we cannot guarantee that our findings reflect the actual condition in the construction industry as a whole, the number of participants and companies still provide a comprehensive indication of the situation. However, our study did only include managers from larger companies. It is possible that our results would have turned out differently if we had included small- and medium size companies as well. We also assume that the outcome would have been different if we had included craft workers in the studies. The studies did not investigate the perceptions of any clients, a factor which could have given us a broader and more comprehensive picture of construction industry. The participants were all based in the Stockholm and Gothenburg area and it is possible that the study would have gained more transparency if applied in a larger national scale.

Our findings should be seen as a concretisation of a current and debatable issue within the Swedish labour market. It seeks to inspire, not only AEC organisations but other industries as well, to reflect on their own procedures and investigate possible proactive measures to mitigate the risk of workplace stress. The thesis has briefly introduced us to an issue which is relatively unexplored within the AEC industry and there are several areas which could be further explored in future research. For instance, we would like to encourage future investigation regarding how AEC organisations should act to improve their adaptability, creativity and innovation processes to become more agile and competitive on the modern societal business arena. One could also investigate how the collaboration and interaction between politicians, academia and the construction industry can be improved in order to meet the current building demands. An interesting aspect regarding psychological distress, is to examine the differences between how larger firms approach the issue compared to smaller companies. Which impact will *Millennials* have on the future construction industry? Also, which potential benefits and disadvantages does the *Power Distance* within AEC organisations create, and can the distance possibly be reduced?

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Appendices

Appendix 1 – questions in the web-based survey

Section 1: Stress and psychological distress in the Construction Industry

1. What is the name of the company that you are representing?
2. What part of the AEC industry do you belong to?
3. What is your professional role in your company?
4. What gender are you?

Section 2: Your perception of mental health in the construction industry

1. To what extent do you feel that your organisation offers a healthy work environment (related to your own and your co-workers' psychological well-beings)?
2. To what extent do you feel that psychological distress is a problem within the construction industry?
3. Psychological ill-health is often connected to stress. Please rank three different factors that you believe contribute to stress.

Section 3: Psychological health related to you as an individual

1. How often do you experience physical loads, such as headache or muscle spasms, in your work-life?
2. How often do you experience physical or mental tiredness in your work-life?
3. How often do you experience sleeping-problems because of your work?
4. Do you experience difficulties to concentrate in your work-life?
5. To what extent do you feel that your job performance is adequate?
6. Do you find it hard to relax in your private life after a day at work?
7. Are you stressed?
8. If yes - where are you most likely to feel stressed (at work, in private life, both work- and private life, other)?
9. To what extent do you feel stressed?
10. How do you feel psychologically?

Section 4: Psychological health connected to your work situation

1. How pleased are you with your current work situation?
2. How do you consider your work environment today?
3. How often do you experience stress in your work?
4. To what extent do you feel irritated at your work?
5. How motivated are you by your work tasks?
6. To what extent do you feel yourself needed by your company?
7. Do you feel that you are given the appreciation you need in your work?
8. To what extent do you feel support from your colleagues?
9. How do you consider your workload?
10. Do you consider having too much, too little or just enough responsibility in your role?
11. To what extent do you consider your workload being balanced?
12. Do you feel like you are in need of extra support to perform your tasks?
13. Do you consider your work stress to be motivating or hindering?

14. To what extent do you think your psychological well-being is connected to your work?
15. How do you think your own psychological well-being affects your work performance?

Section 5: Psychological health related to your organisation

1. How pleased are you with your current employer?
2. To what extent do you consider your company having a healthy culture?
3. To what extent do you think that your employer has to improve the organisation's policy to create a healthy work climate?
4. To what extent do you have possibilities to talk to your employer about your impression of the work environment?
5. Are you interested to advance within the company?
6. Are you interest to change to another occupational role?
7. Do you feel that you would like to work less hours?
8. To what extent do you consider your company is taking its employees' psychological health seriously?
9. To what degree do you think your employer is taking responsibility for its employees' psychological well-being?
10. Do you consider the current and future resource shortages (related to shortage of employees) within the AEC industry to be of importance for your organisation?
11. Do you think there is a connection between the resource shortages and the work climate in your organisation? If Yes/No, please elaborate.
12. To what extent do you feel stressed because of resource shortages? (Shortage of employees)
13. To what extent do you think your organisation has the resources to meet their current projects and undertakings?
14. Do you feel that your colleagues are stressed?
15. To what extent do you have the possibilities to affect your current work situation, to improve your work-life balance?
16. Do you think that there is a need to raise the awareness of psychological distress in the AEC industry?

Section 6: Further questions

Is there anything that you would like to add in this survey? Or is there anything else you would like to illuminate?

Appendix 2 – outline of questions in the interview study

1. Tell us a little bit about your company. What do you do? How many employees are currently working here? Where can we find your company within the construction sector?
2. What is your role within the company? Tell us about your tasks, responsibilities and interaction with the other employees?
3. Do you feel like there is a discussion about psychological distress in the Swedish construction industry? What is the common approach towards this issue within the sector?
4. Do you personally consider the question about work-related psychological distress to be an issue within the industry? If so, in what way?
5. To what extent is your company highlighting questions about work-related psychological health?
6. Do you consider your co-workers to be stressed? If so, in what way?
7. Which stressors do you consider to be the most common ones at your company? Can you please mention three different stressors?
8. How high is the turnover-rate at your company? What are the reasons behind the levels?
9. Do you have any problems with sick-leaves?
10. Do your organisation have any strategies to deal with stress?
11. Do your company have any action plans to prevent psychological distress among your employees?
12. Do you believe that the employees feel like they can speak openly about their work environment and psychological well-being at work?
13. Do you think that your company needs to work more actively with the question about work-related psychological health?
14. How do consider your own, and your colleagues' workloads?
15. Do you believe that your organisation has sufficient resources to keep up with the commitments?
16. How is your company affected by the current resource shortages (employee shortages)? Do you think there is a connection between resource shortages and the work climate at your company?
17. To what extent do you have the possibility to control your work situation and create WLB?
18. Do you feel like you are working too much?
19. Do you take too much responsibility?
20. Is it something you would like to add to our questions? Something important that we have missed?

Appendix 3 – All t-test, mean values and standard deviations

In the following tables, there are all, at least for those that are scale questions, mean values and standard deviations from the t-test in IBM-SPSS. However, there were two questions with the wrong scale that had to be changed to fit the majority. The formula used to change the scale from 1 to 10 to a scale from 1 to 7 is the following:

$$Y = (B - A) * \frac{x - a}{b - a} + A$$

Where A and B is in the desired scale (A=1 and B=7) then a and b is the original scale with a=1 and b=10. Finally, this gives us an equation to change the answers to fit the desired scale:

$$Y = \frac{1}{3} * (2x + 1)$$

One-Sample (T-test)

Questions and variables	N	Mean	Std. Deviation
What gender are you?	85	1,40	,516
To what extent do you feel that your organisation offers a healthy work environment (related to your own and your co-workers' psychological well-beings)?	85	5,18	1,136
To what extent do you feel that psychological distress is a problem within the construction industry?	85	4,42	1,442
How often do you experience physical loads, such as headache or muscle spasms, in your work-life?	85	2,91	1,556
How often do you experience physical or mental tiredness in your work-life?	85	3,85	1,484
How often do you experience sleeping-problems because of your work?	85	2,80	1,478
Do you experience difficulties to concentrate in your work-life?	85	3,02	1,389
To what extent do you feel that your job performance is adequate?	85	5,09	1,333
Do you find it hard to relax in your private life after a day at work?	85	3,08	1,620
To what extent do you feel stressed?	85	3,46	1,368
How do you feel psychologically?	85	5,51	1,240
How pleased are you with your current work situation?	85	5,24	1,428
How do you consider your work environment today?	85	5,28	1,419
How often do you experience stress in your work?	85	3,62	1,414

One-Sample (T-test)

Questions and variables	N	Mean	Std. Deviation
To what extent do you feel irritated at your work?	85	3,02	1,431
How motivated are you by your work tasks?	85	5,81	1,180
To what extent do you feel yourself needed by your company?	85	6,04	1,331
Do you feel that you are given the appreciation you need in your work?	85	5,27	1,491
To what extent do you feel support from your colleagues?	85	5,39	1,337
How do you consider your workload?	85	4,73	1,304
To what extent do you consider your workload being balanced?	85	4,24	1,469
To what extent do you think your psychological well-being is connected to your work?	85	5,2118	1,009
How do you think your own psychological well-being affects your work performance?	85	5,7137	1,391
How pleased are you with your current employer?	85	5,76	1,241
To what extent do you consider your company having a healthy culture?	85	5,28	1,419
To what extent do you think that your employer has to improve the organisation's policy to create a healthy work climate?	85	3,66	1,532
To what extent do you have possibilities to talk to your employer about your impression of the work environment?	85	6,05	1,204

One-Sample (T-test)

Questions and variables	N	Mean	Std. Deviation
To what extent do you consider your company is taking its employees' psychological health seriously?	85	5,39	1,473
To what degree do you think your employer is taking responsibility for its employees psychological well-being?	85	4,69	1,581
To what extent do you feel stressed because of resource shortages? (Shortage of employees)	85	4,19	1,547
To what extent do you think your organisation has the resources to meet their current projects and undertakings?	85	3,66	1,468
Do you feel that your colleagues are stressed?	85	4,45	1,129
To what extent do you have the possibilities to affect your current work situation, to improve your work-life balance?	85	5,08	1,382
Individual indicator	85	3,40	,950
Work related indicator	85	5,13	,779
Organisational indicator	85	5,39	1,123