Negative aspects of project-based work: The impact of stress and burnout on workers performance.

A quantitative study of the impact of subjective stress, burnout and social support on individual performance in project-based work.

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Forewords and acknowledgements

The following master thesis was written as part of our master's degree in Business and Administration from the School of Business and Law at the University of Agder.
The process of conducting research and writing this paper was challenging and demanding at times, but also interesting and educational. Writing this thesis provided us with the opportunity to get a deeper understanding of topics that we find highly interesting and relevant, namely projects and its negative impact on the individuals. In this thesis we aim to explore the impact of stress, burnout and support on individual performance in project work.

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Abstract

Project-based work is said to foster dynamic environments for innovation and learning, but it can also make the employees vulnerable, exhausted and reduce their performance. Some have even stated that it can cause more harm than good. This study aims to investigate the impact of social support, stress and burnout on the individual's performance in project-based work. Existing studies have explored how stress and burnout in general impact an individual, but few have assessed the impact in a project-based work environment and looked at how it effects the individual performance. This research also differentiate itself with previous research in project-based work by focusing on subjective stress, rather than objective stress or a combination of both. As project-based work is rapidly increasing and much of the focus in previous research have been on the Project Managers it is highly relevant and interesting to explore how it impacts all the project members. By using the MBI-GS and the inverted-U model as the starting point of the study, the aim is to explore the research gap of how subjective stress and burnout in project work impact employee's individual performance using a quantitative approach. While the main hypothesis considers the impact of subjective stress and burnout on employees' individual performance, the direct and potential moderating effects of social support are also included.

Further, correlation analysis and structural equation modelling are employed to uncover the relationship between different types of stress (i.e., subjective stress and burnout) and the individual performance of project members. The questionnaire was distributed by nine leading project management associations in Scandinavia and answered by 119 respondents. Our findings demonstrate that all our independent variables, except for one, had a significant impact on individual performance, while all the moderating variables did not have any significant impact. Nevertheless, the results in this paper contributes to a better understanding of the relationship between social support, subjective stress and burnout in project work and its influence on individual performance.

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1. Introduction

Projects are one of the most significant characteristics of contemporary organizations (Clegg, 1990; Ekstedt et al., 1999; Whittington et al., 1999). Project work are used to solve different types of tasks and work assignments, in almost any type of businesses (Maylor, 2001). According to Lundin and Söderholm (1998), the Western economies seems to be leaning towards a ‘’projectified society’’, in where project work is not only used for handling extraordinary undertakings, but also used to handle increasingly more of the organizations’ everyday operations (Hobday, 2000; Turner, 1999). This growing trend has been termed differently by researchers, but the common term preferred by most is “projectification” (Midler, 1995; Packendorff & Lindgren, 2014; Schoper et al., 2018).

Project-based work is said to encourage innovation, flexibility, efficiency and construct better learning conditions. Structuring parts of the organization into projects can be a reliable source for competitive advantage as it makes it easier for organizations to respond to customers differentiated and customized demands (Packendorff, 2002; Turner et al., 2008). However, project teams face complex, highly demanding, and often stressful work environments and because of this it is not shocking that project settings are highly conductive to work-related stress (Verma, 1996; Haynes & Love, 2004; Richmond & Skitmore, 2006.)

While project-based work may create more opportunities, adventures and experiences for the individual worker (Lindgren et al., 2014), it comes at a cost. Working in projects makes the project workers more exposed to feelings of exhaustion, stress, poor work-life balance and burnout (Peticcia-Harris et al., 2015; Cicmil et al. 2016). The decision making of individuals who find themselves in stressful environments is generally more rigid, simplistic, and superficial (Cherrington, 1994). Hence, stress is seen as having a negative impact on human beings and their choices. Even though stress is generally seen as bad, it is not necessarily harmful and Selye said that *‘’ without stress, there would be no life’’* (Selye, 1976).

The stimulus of stress is crucial for every successful experience we have as humans, as it is always accompanied by motivation (Selye, 1976). Friend (1982) reported negative relationship between stress and performance of management personnel, while Anderson (1975) found an inverted U-shaped relationship between stress and individual performance in his research among managers.

Furthermore, in the construction industry, Leung et al. (2005), found that the impact of stress on the performance of construction estimators lead to poor interpersonal relationship and task performance, and an inverted U-shaped relationship was seen between their organizational relationship in the company and the stress of estimators. Fatigue and frustration are just some of the factors that occur when humans fail in their work, life or of relationships to produce the expected reward (Freudenberger, 1983). People react to stress with a range of different behaviors (Keavney & Sinclair, 1978; Cohen et al., 1995).

Burnout is not always easy to spot, but the symptoms of burnout include changes in the social life of individuals (i.e., project workers may avoid to interact with other people in their project or in their private life) and attitude to work (i.e., having low motivation and low commitment in work situations due to prolonged frustration, and frequent grumbling about your low accomplishment) (Drago et al. 1986). All the mentioned factors directly affect the work performance of a project member, thus, indirectly, the success of a project.

1.1 Research gap and research goal

It has been claimed since the middle of the 1960's that our society and our lives is becoming increasingly projectified (i.e., organised in terms of time-limited sequences of action and interaction) (Miles, 1964; Bennis & Slater, 1968; Packendorff, 2002). Further, it is stated that most of the research done pre 1970 was conducted from a depersonalized and organizational perspective. The research done on the individual project member level was rare, and the focus was primarily on the project manager, neglecting the other project-team members (Blomquist & Gällstedt, 2002; Packendorff, 2002; Andersson & Wickelgren, 2009). The research done in this field was also said to rest upon quite a weak empirical base, since there was a lot written on how the managers should behave and very little on their actual behavior (Perlow, 1997; Lindgren & Packendorff, 2001). Several studies focused on how the employees' emotions impacted the success of a project and how the employees should behave, however, there was limited research done on the emotions that occur in project-based work (Lindgren et al., 2014; Reeser, 1969). In later years there have been a shift from the former depersonalized view to a more personalized perspective, resulting in a rapid grow in studies on how project work affected the individual worker (e.g., Packendorff, 2002; Bowen et al., 2014; Lindgren et al., 2014; Peticca-Harris et al., 2015).

It is important to note that these studies aimed to understand how the workers perceived project work in general (not specifically linked to stress and burnout) and the research method had a quantitative approach, with personalized interviews. Previews studies have also emphasized the need for further research to be conducted on project-based work in an everyday practice and how the individual is affected by it (Packendorff & Lindgren, 2014; Burke & Morley, 2016; Cicmil et al., 2016).

Very little research had been done on social support, subjective stress and burnout and its impact on the individual project worker. The studies that has been done tend to focus all its effort on the PMs (Project Managers) and not the rest of the project work group. The need for more research on this topic, especially on the individual level, is often mentioned in previous research (Pinto, Dawood & Pinto, 2014; Packendorff & Lindgren, 2014; Leung et al., 2008).

We seek to contribute to the project management literature by analyzing the data collected, first we want to find out how stressful project work is perceived as by the individual project worker. Second, we want to asses to what degree they feel burnout. Third, we want to see how the degree of stress and burnout affect their individual work performance. Additionally, we want to see how social support affects these relationships.

The Maslach Burnout Inventory – General Survey (MBI – GS) will be at the base of this thesis, as this model is well known and highly recognized (Maslach & Jackson, 1986; Lee & Ashford, 1990; Leiter, 1993). It is also designed to fit all kinds of working environments, including project-based work (Maslach et al.,1996). The inverted-U-theory, developed by Yerkes and Dodson, 1908, later modified by Leung et al., 2005a to better suit project work environments, will also be highlighted further in this paper. We will come back to these models later in this study.

Based on these points, the research question for our thesis is as follows:

"How does subjective stress, burnout and social support affect individual performance in project-based work?"

1.2 Structure

The paper is structured as follows: In the first part, there will be a discussion of the relevance of project work and the workers perception of social support, stress and burnout, and its influence on the individual workers performance. Followed by the theoretical framework, that works as the foundation of the thesis. Further, there will be an exploration of the relationship between the variables in this study, this will be retrieved from the data collection that was gathered through an online questionnaire. Finally, in the last part of the thesis the results and findings will be presented, followed by the conclusion, limitations and suggested directions for further research.

1.3 Relevance

Midler (1995) created the term ‘’projectification’’ and he foresaw a phenomenon that describes the current development in Western countries (Schoper et al., 2018). This notion of projectification has emerged as projects have become an ordinary form of work in all of today’s organizations. It is most visible in the transformation of traditional firms into ‘’project-based firms’’ (i.e., firms in which most operations are done in projects and where the permanent structures function as administrative support) (Hobday, 2000; Cicmil & Hodgson, 2006; Söderlund & Tell, 2009). The basic reason for this diffusion seems to be that the project, seen as a task-specific and time-limited way of working, is perceived as a controllable way of averting all the classic complications of bureaucracy with which most ‘’regular’’ organizations are struggling (Packendorff, 1995; Hodgson, 2004; Cicmil & Hodgson 2006; Lindgren & Packendorff, 2009).

Projects is seen as a promise of both controllability and adventure (Sahlin-Andersson, 2002) and it is claimed that it is a necessity when faced with complexed and extraordinary business tasks (Cicmil et al., 2009). Considering this, project-based work is surfing on the wave of new ‘’post-bureaucratic’’ organizational forms that can be seen evolving in most industries the past recent decades (Gill, 2002; Clegg & Courpasson, 2004; Hodgson, 2004; Lindgren & Packendorff, 2006a; Söderlund, 2011).

It is therefore not surprising to see that in the past couple of decades the trends in the scholarly debate on topics like research directions, areas of interest, theoretical and methodological assumptions relating to this development has been intense.

Considering this, the past 20 years scholar works on the literature of temporary organizations has increasingly gotten more attention. Between the years of 1998 and 2008 a total of 61 studies involving temporary organizations were published in international Scientific Indexed journals and books, which was an increase of 339% compared to the previous decade (1988-1998) (Bakker, 2010).

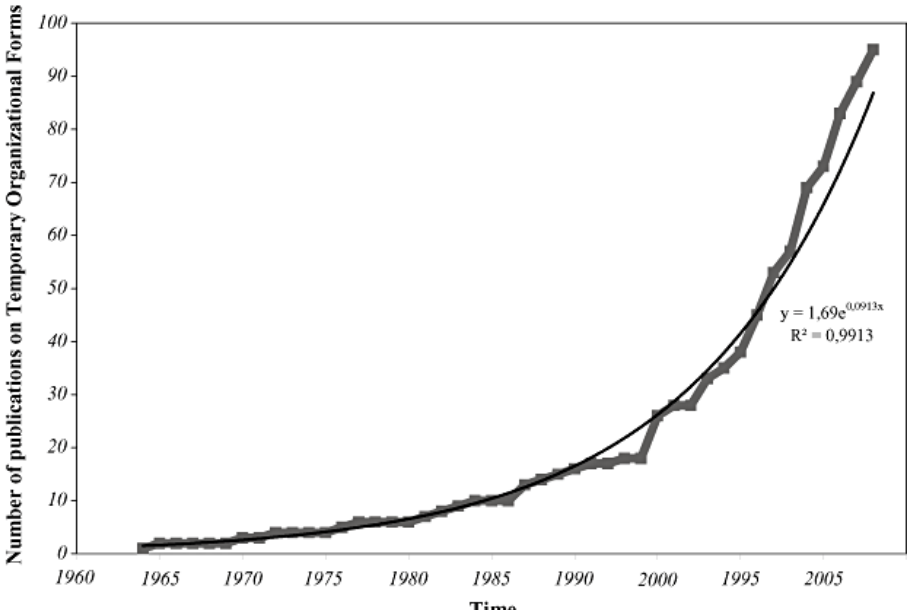

Figure 1 (1.1) *Growth of literature on temporary organizational forms from 1960 to 2008 (Bakker, 2010).*

There has also been a rapid growth in the number of ‘’professionalized’’ project-oriented organizations, such as the Project Management Institute (PMI). PMI is one of the world’s biggest project-oriented organization, it was established in the United States of America in 1969. In the year 1990, the PMI had 7 500 members, and by 2010 this number had risen to more than 320 000 members in more than 170 countries. This huge growth indicates that there has become a rapid growth in the use of projects (Meredith & Mantel, 2012, p. 5).

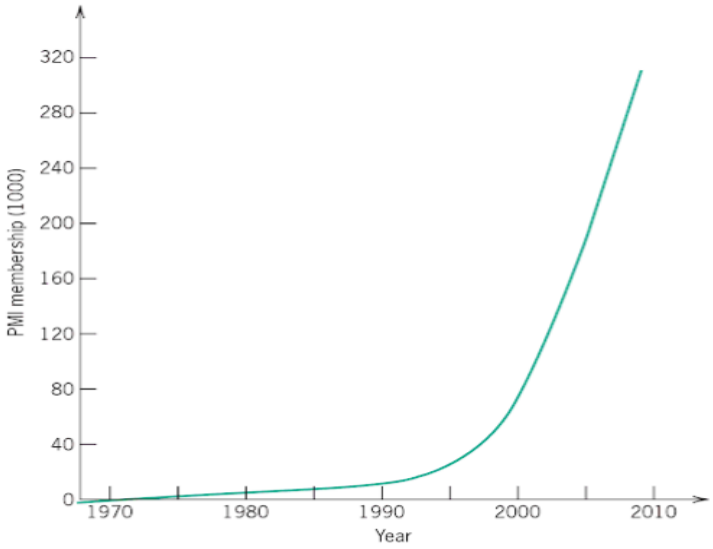

Figure 2 (1.2): *Project Management Institute growth history (Meredith & Mantel, 2012, p. 5).*

A report published by the Project Management Talent Gap Report in 2013 on the matter of the future of the project management profession, concluded that between 2010 and 2020 there would be 15,7 million new project management roles created globally across seven project-intensive industries. Consequently, the need for projects managers will continue to rise rapidly (Project management Institute, 2013). Gemuenden and Schoper (2015) also collaborate this with their study, showing that the societies will become increasingly projectified. Thus, the need for more research on the consequences of project-based work is highly needed and especially on the negative sides.

*"Project-based work will become the norm or business as usual in most sectors and most functions, rather than something separate from, or embedded within, routine, repetitive activities." (*Gemuenden & Schoper, 2015, p. 7).

As more and more of the value creation of companies is being generated by projects (Schoper et al., 2016) and as we see a tendency for an increasingly projectified society (Packendorff & Lindgren, 2013) it is highly relevant and necessary to start focusing on the effects that project work has on the individual project workers health, and in turn impacts their performance (Andersson & Wickelgren, 2009). Literature on the topic of burnout and its implications are said to have mostly a significant negative impact on job performance, organizational behaviors and health and well-being (Maslach et al., 1996).

Many international organizations and countries are concerned about these findings and are starting to take actions to prevent this trend from evolving, as a result there have been launched a series of guidelines concerning the phycological stress of general practitioners (World Health Organization et al., 2003; Institute of Work, Health and Organisations, 2008; Health and Safety Executive, 2008; International Labour Office, 2012) Other countries, like China, continue to pay little attention to this issue, and research indicates that in countries with lower awareness on this issue, the higher the problem seems to be (Yang et al., 2017).

Although previous research shows that in the past couple of decades there has been a rapid increase in project work, newer research indicates a tendency for this increase to slow down. But seeing that 30% of the global economy is made by project work (Turner, 2009), and that by the year 2020 the share of project work in the Norwegian economy will be at 33.8% (Schoper et al., 2018), it is still highly relevant to concentrate more research on the topic of project work and how it affects all of the individuals in the project group. Also, since the Norwegian economy has such a high percentage of work done in projects, it would be interesting to see how project-based work affects the project-group members in all the Nordic countries.

2. Theoretical framework

This section presents a literature review on project work, stress, burnout, individual performance and the relationship between the four. Furthermore, the research model and hypotheses are presented.

2.1 Temporary organizations and project-based work

Before the concept of projects is explained it is important to get a clear understanding of the difference between a temporary organization and a permanent organization, since it exists a conceptualizations of projects as temporary organizations (Sydow & Braun, 2018). According to Saunders and Ahuja (2006), they can be separated in two ways. First, members in a permanent organization are aware that the teamwork itself will be recurrent and interaction with other participants in the team will be of an enduring time. Second, permanent organizations are concerned with both the long-term efficiency of the processes as well as accomplishing an effective durable outcome. On the other hand, temporary organizations are primarily focused with accomplishing the goal of the current task. Further, there is time

pressure involved with the task completion and there is also no expectation of future interactions with the same team.

It is important to highlight that temporary organizations are usually part of permanent organizations. As permanent organizations set up temporary organizations and provides them with the necessary resources (Engwall, 2003; Nuhn et al., 2017).

Lundin and Soderholm (1995) identified four concepts; time, task, team and transition, that separates a temporary organization from a permanent one. The four-concept theory explained in short; temporary organizations have a time limitation, specific project task in which many organizations bring their own expertise and members, the task has a degree of complexity and its goal is to develop or change the current situation. It is also obvious that these four concepts are related to each other. The complexity of a task may put limits to time, and vice versa. The task definition also implies expectations about transition and team size and so on. Because of this we can say that every temporary organization is a complex entity.
However, few years after Lundin and Söderholm identified the four T's, Turner and Muller (2003) integrated elements of the classic project management view with the perspective of projects as temporary organizations. More recently, scholars are more in favor of combining the two views. By taking this pluralistic approach they can make use of the broad variety of organization theories as well as account for the interdisciplinary nature of project management (Lundin, 2011; Sörderlund, 2011).

Nevertheless, projects are one of the most significant characteristics of contemporary organizations and has become a common part of the economic and social life today (Clegg, 1990; Ekstedt et al., 1999; Whittington et al., 1999). Projects are used to, among others, renew businesses and to change existing operations in business firms. In order to ''make things happen'', special forces, committees or action groups are formed, organized or appointed to take care of something that ''needs to be done'', within or among the organizations. Also, in some industries, such as the construction and consultant industries, project as a temporary organization is the main method of doing business (Lundin & Söderholm, 1995).

The use of projects has become so usual in newer time that it is used to solve any type of tasks or assignments of almost any type or size, in almost any type of business (Maylor, 2001). In fact, according to Lundin and Söderholm (1998) the Western economies is heading towards a ‘’projectified society’’, where project management and temporary organizations are not only used for handling extraordinary undertakings,
but also represent an increasingly large share of the organizations’ ordinary operations (Hobday, 2000; Turner, 1999). Furthermore, researchers claim that projects are used in an organization mainly to increase its flexibility, innovativeness and to further increase the capability to solve complex problems (Hobday, 2000; Hanisch & Wald, 2014; Lundin et al., 2015).

As the project-work has become more and more usual in todays’ society so has the need for more research on project-based work and its impact on the project workers. Studies on the topic of project-based work has rapidly increased, and so has the definition of project. The Project Management Institute (PMI) has probably one of the most simplistic definition of projects, as they define it as *“a temporary endeavour undertaken to create a unique product or service”* (Pinto, 2013, p. 25). However, Turner et al (1988) made a more complex definition, as they defined a project by characterizing five traits; creating change; having mixed goals and objectives; being unique; having limited time and scope; and involving a variety of resources. While Turner (2009, p. 2) defined it as: *“a project is a temporary organization to which resources are assigned to do work to deliver beneficial change.”*

It seems like all of the definitions of projects tend to involve a lot of the same characteristics, such as; that a project is limited in time and scope, deals with complex tasks, has a specific goal, involves several resources and is unique (Turner et al., 1988; Project Management Institution, 2008, p. 4; Turner, 2009, p. 2; Rolstadås, 2011, p. 5; Karlsen, 2013, p. 18; Lindgren et al., 2014; Burke & Morley, 2016). Bearing these characteristics in mind, this thesis will use the definition of Schoper et al. (2018) as the basis, this definition is very thorough and best fit our topic;

"A project is an undertaking largely characterized by the uniqueness of the conditions in their entirety, i.e.

- A specific target has been defined for the project.

- The project is limited in terms of time (start and end).

- The project requires specific resources (e.g. financial, staff, etc.).

- An independent process organization exists, which is defined as different from the standard organization in the company.

- The projects work on non-routine tasks.

- The project has a minimum duration of four weeks.

- The project has at least three participants."

(Schoper et al., 2018, pp. 73-74).

2.1.1 Negative consequences of project-based work

Most of the research initially done on the topic of project-based work and its implications on the individual worker has been on the positive sides, such as innovativeness and effectiveness, and not so much on the negative sides, such as stress and burnout. However, there has in time been a shift from only looking at the positive sides to now also looking at the negative sides. And an important question has arose with this new shift; whether project-based work really is as attractive as it seems (Cicmil et al., 2016).

Project work has set terms and clear goals, and because of that said to be motivating (Pinto, 2013). However, work in projects tends to involve tight deadlines, implying high pressure on the project workers involved. The project group participants involved might change their perceptions of the situation if incidents happen that might affect the project. Assumingly, members in a project group experience both motivation and stress during the project lifespan (Gällstedt, 2003).

Researchers in the field of project management has identified various workplace pathologies, including a high predilection toward stress and burnout due to the nature of their job demands (Lingard et al., 2007; Yip & Rowlison, 2009).
Studies have linked these workplace demands to settings outside of the project, reporting making the participants experience a ‘’off-site’’ feelings of wellbeing (Lingard & Sublet, 2002). It is clear that project work characteristics makes the project members prone to stress, affecting both working and nonworking relationships, personal health, and work performance (Djebarni, 1996).

Although project-based work has been adopted by many organizations in recent years, the characteristics of project work, such as its uniqueness and challenging environmental characteristics in which human resources function, continues to offer significant workplace implications (e.g., stress and burnout) (Sommerville & Langford, 1994; Atkins & Gilbert, 2003; Chioccchio et al., 2010).

Furthermore, Reukert and Walker (1987) stated that PMs and their teams face stressful environments because of project time- and resource constrains, having to balance the often-competing expectations and goals of different departments in the organization. For example, dual hierarchies between PMs and functional heads is established in many organizations using matrix structures to manage projects in order to make the distribution of resources more efficient. However, at the same time these structures will create a competitive environment among the managers who will demand time to negotiate and resolve conflicts (Larson & Gobeli, 1987). These problems are often exacerbated because of the dual loyalties project team members have to their managers, on top of that they often have many projects to deal with at the same time, as well as their normal line work. All these factors result in a natural setting for a number of workplace pathologies, including stress and burnout (Lingard et al., 2007; Pinto et al, 2013). Additionally, Verma (1996) stated that project managers experience significant level of stress because they are faced with an endless list of demands, deadlines, and other problems throughout the project’s life cycle.

Although project work environment offers unique and stressful conditions for the employees, to date little research has examined how project work affect the various participants in a project group (e.g., differences between PMs and their team members). It is not only the PMs that are important for a project to succeed, also the project team members are crucial in this

matter, as they may also be responsible for functional duties (the essence of the matrix structure) (Pinto et al, 2013).

As a result of this, there is a good chance that the team member may violate department mandates or vice versa in order to further the project goal. Likewise, PMs, seeking to please the expectations of multiple project stakeholders (functional department heads, top management, clients and the project team), will often find themselves being in a no-win situation, where the more satisfied one of the stakeholders gets, the more dissatisfied another one gets, and the fewer benefits that one is likely to derive. Technical professionals (i.e., engineers) serving on projects may have made routines trying to deal with this type of problems, finding adequate solutions, but they are prevented partially or fully from resolving such issues due to budgetary or time pressures to ‘’get the project done’’.

While all the participants of a project face significant workplace demand, which may lead to stress and in turn lead to burnout, it is intriguing to see how these effects may differ by the organizational position held (e.g., PMs versus other members of the project team), and especially in the Nordic countries, which are known for good working environments (Leiter & Schaufeli, 1996; Gallie, 2003; Pinto et al., 2016).

Even though there is general agreement among researchers that high job demand and complex work environment, such as in project work, can lead to workplace stress (Perrewe & Ganster, 1989), we should not view this work stress as a final stage, but understand the source of additional, subsequent psychological pathologies and consequences (e.g. burnout in the workplace) (Cordes & Dougherty, 1993; Cordes et al., 1997).

Researchers found that when organizational members were faced with excessive burnout, they wanted to leave their jobs (Lee & Ashford, 1990; Weisberg, 1994). Even though their research was not done specific in a project-based work environment, it is not unrealistic to think that the same observation would be made in project-based work.

From a human-resource perspective, the main goal is to keep every employee from quitting their job, as well as making sure they are committed to perform their best for the organization; as it is very costly for the organization to lose employees as it forces them to identify, hire and train new replacements (Pinto et al., 2016). Thus, the incentives are great for organizations to

minimize the impact of workplace stress and burnout, also in a project-based environment, to keep the employees from quitting and by doing so letting them get the opportunity to potentially reach their highest individual performance.

2.2 Stress

Dr Hans Seyele is often referred to as the father of stress research and was the person who introduced the concept of stress in 1936 (Senaratne & Rasagopalasingam, 2017). Seyle divided stress into two different categories, eustress and distress, based on if it was helpful or harmful. Eustress is seen as helpful stress and is related to happiness, hopefulness and purposefulness, whereas distress is seen as harmful and damaging (Seyele, 1993). However, people are different, one person may look at a stimulus and perceive it as a challenge to overcome on the path to mastery and growth,
while a different person may see the same stimulus as a threat, leading to stagnation and loss. This is also the reason stress should be viewed as a continuum since an individual may pass, from feelings of eustress, to those of mild and moderate distress to those of severe stress (e.g. burnout) (Senaratne & Rasagopalasingam, 2017).

The complex phenomenon of stress encompasses social, physiological and psychological imperatives (Lazarus & Folkman, 1984). Frustrating and unsatisfying conditions are a result from the internal state of stress. Researchers and practitioners have, since the emergence of the important concept in 1936, been inspired to study it and to try and find a way to cope with it, prevent it or combat it (Schaufeli et al., 2009). No matter the reasons for stress, most authors agrees that stress is the most discreet killer of all at the workplace (Sargent, 2007, p.11).

There are a lot of definitions of stress, but the most commonly accepted was given by Lazarus and Folkman in 1984. They defined stress as a condition experienced when a person perceives that demand exceed an individual's resources. By interpreting this definition, we see that people who has enough resources such as time and experience to manage a situation feel less stressed than the ones who hasn't.

Sources of stress is called stressors, which is important to understand in order to get a deeper understanding of the underlying meaning of stress. Stressors can be events, people or thoughts. It is typical to categories them into four main groups: 1. Task stressors; 2.

Organizational stressors; 3. Physical stressors; and 4. Personal stressors (Gmelch & Chan, 1994; Leung et al., 2009).

First, task-related stress occurs when there is too much work to be done in too little time. If we take CPMs as an example, their task stressors could be work overload; role conflict, role ambiguity; and tight time frames. Further, we can divide work overload into two separate groups: quantitative work overload, developed by too many tasks, and qualitative work overload, developed by a lack of knowledge necessary to complete the task. An example of something that could create qualitative work overload could be the demand PMs face when they are expected to learn new technology. Quantitative overload is cited a lot in the literature, and especially in the construction literature.

Work pressure and long working hours were some of the key stressors of CPMs in Australia, according to research done by Haynes and Love (2004). Djebarni (1996) also found that rigid time frames in construction project, such as insufficient time in a combination with pressure to make urgent decisions with limited information were some of the key issues faced by the PMs, provoking managerial stress, and that without proper care could in turn lead to burnout.

The second category, organizational stressors, include organizational structure, organizational policy and the climate for career development. The matrix form of project organizational structure in constructional work is most widely adopted (Gray et al., 1990), this can and will most likely lead to conflicts with functional managers, which again leads to stressful situations. Organizational policy that does not include or take in to consideration the feelings of employees may cause the employee considerable stress. Lastly, we have the organizational climate, factors such as the absence of opportunity for promotion, unfavorable organizational culture, the absence of job security, the absence of career guidance and inadequate room for innovation, are all factors that could lead to stress. Senaratne and Malewana (2011) found that organizational conditions and culture are requisites for construction practitioners to learn and improve, and by doing so they could avoid the qualitative workload.

The third category, the physical workplace, has a huge impact on the individual stress level. Physical stressors refer to all the factors which are physical, such as extreme temperatures, noise and vibration, poor air quality, overcrowding work places, unsafe working conditions and such. Love et al. (2010) states that the construction sector and its project work

environment have a tendency for operating in undesirable working conditions on the construction sites. Further, they claim that the work environment quality is crucial to improving the ability of construction professionals to cope with stress.

Fourth, personal stressors include both interpersonal and intrapersonal stressors. Intrapersonal stressors are looked at as to be more competitive, aggressive and time-driven, and will lead to what is called type A behavior. Factors contributing to the interpersonal relationship among the participants in a project group are work group cooperation and team spirit contribution. In addition, two other facts that also play a major role in inducing stress are family conflicts and inadequate leisure time (Senaratne & Rasagopalasingam, 2017).

In later research, researches (e.g., Rodney, 2003; Laplante et al., 2004; Leung et al., 2007) identified two types of stress, subjective stress and objective stress. Subjective stress is developed from internal factors and it is tied with a person's subjective feelings; mainly evaluated by the satisfaction degree with the environment, this would include feelings of happiness or depression, confidence in the organization, etc. Objective stress is generated by external factors and occurs as a result of events experienced; it mainly focuses on the evaluation of events experienced by the person concerned. For a PM, example of such events could be; the number of projects, the number of deadlines, etc. Hence, objective stress refers to a negative discrepancy between an individual's received state and desired state (Edwards, 1988), while subjective stress is measured as the degree of subjective impact experienced as a result of a specific event (Horowitz et al., 1979). There have been a lot more research done on the consequences of objective stress in project-based work than on subjective stress, hence the importance of contributing with more research on subjective stress in project work settings.

According to Haynes and Love (2004), a lot of constructional project managers (CPMs) are prone to objective stress because of all the external factors they face in their job situations, such as; project deadlines, the number of tasks (meetings, site visiting etc.) and the difficulty of tasks (complexity and variance). These problems could also trigger subjective stress, leading to feelings such as; discomfort, loss of confidence and feelings of depression.

While searching through the literature it became clear that males and females had some generalized responses to stressors, however there were some evidence, albeit contradictory, to indicate that males and females experience stress differently. Tung (1980) found that females

suffered from lower workplace stress than males. Further, Davidson and Cooper (1992) found that females and males responded differently on different types of stressors in the workplace, whereas Matocchio and O'Leary (1989) found that gender did not have a significant impact. Newer research is more consistence in indicating that gender has an influence on stress perception. In particular, Nelson et al. (1990) found that females were more stressed in their jobs as human resource management professionals than their male counterparts. In addition, McDonald and Korabik (1991) found that while females would report that they felt more stressed from home/work interface, men reported that their stress arose from managing subordinates. Those findings were also supported by Davidson and Cooper (1992) who also found that females felt that disciplining subordinates to be a relatively low source of stress. Lim and Teo (1996) found that stress on information technology (IT) workers corresponded with what Nelson et al. (1990) discovered. In addition, they also found that the fear of making mistakes was higher among females than males. Gender also played an important role in how to cope with stress; men tend to withdraw and engross themselves in a nonwork leisure activity while women relied on the support of friends and family to confront and rationalize the stress experience. Additionally, Loosemore and Waters (2004) looked at how gender influenced stress coping behavior. They found that males and females suffer from different stressors, but that males felt that they were generally more stressed.

2.3 Burnout

Researcher have also identified one other level of stress, burnout, which emerge when the sources of work stress are chronic and continuous. Burnout in the workplace is a global phenomenon (Schaufeli et al., 2009b) that people easily can relate to, either personal or through others.

Freudenberger (1974) was the person who coined the term burnout after he himself fell victim to burnout twice, which increased his credibility in conveying the message of the burnout phenomenon (Schaufeli et al., 2009a). Since then, the field of burnout has become so great that professionals make a living treating burnout victims worldwide, in the region of Europe burnout is also an official medical diagnosis that paves way for affected employees to access compensation claims and treatment programs (Schaufeli et al., 2009a).

As uncertainty is a big part of any project (Wikström & Gustafsson, 1999) and seen as research in psychology states that humans need stability and continuity in life (Ingelgård, 1999), one can see how the work form of projects can influence an individual's stress levels and in turn lead to burnout, which obviously has a negative impact on the individual's performance. Even though the degree of reliance on such stability differs between individuals, the effort to try to satisfy this need for continuity in work life is common to everybody. Incidents that disrupt stability might be perceived as stressors and could generate feelings of inadequacy, decrease self-confidence and, thereby, cause negative health effects (i.e., burnout) (Ingegård, 1999).

Since burnout is such a complex phenomenon, Maslach and Jackson (1981) developed the Maslach Burnout Inventory (MBI), which has since been adopted and modified by other researchers and practitioners, to measure the burnout levels among employees. It is said that the MBI was so popular among researches that it had been cited in 93 percent of the journals and dissertations by the end of 1990s (Ritacco et al., 2013). This is because of burnout being a phenomenon of notable global significance (Maslach et al., 2009, p. 86).

Maslach has explained burnout as a syndrome of emotional exhaustion, depersonalization and diminished personal accomplishment that can appear among individuals within a working group (Maslach et al., 1996). Further, emotional exhaustion, which is the first component of burnout, describes the affective, feeling states of the individual characterized by depleted emotional resources and the lack of energy. Depersonalization, which is the second component, is characterized by negative, cynical attitudes and feelings about one's clients. In this stage employees also view their clients as somehow deserving of their lot in life. The very last component of burnout, diminished personal accomplishment, refers to the tendency to evaluate oneself negatively. Employees experience that they are not accomplishing anything at work and are very displeased with their work-related progress (Maslach & Jackson, 1986, p.1).

Although burnout was first seen as a phenomenon only appearing in the human service occupations, researchers and practitioners began to understand that burnout occurred in other

professions as well (Maslach & Leiter, 2008), including in project-based work (Buick & Thomas, 2001, p. 305).

In newer times, Maslach considered that chronical stressors in general occupations originated mainly from tasks rather than from interpersonal interactions with service recipients. Maslach then ‘’upgraded’’ the previous MBI theory to fit all kind of working environments, including project-based work, and developed the MBI-GS (General Survey), where work burnout was defined in three dimensions: Emotional exhaustion, cynicism and professional efficacy (Schaufeli and Leiter, 1996).

Emotional exhaustion describes physical and mental fatigue and a lack of motivation, cynicism reflects indifference or an attitude of distance toward work, and professional efficacy measures both social and non-social aspects of occupational accomplishments. Thus, the newly developed exhaustion and professional efficacy components were of high similarity with the original emotional exhaustion and personal accomplishment components, while cynicism superseded the interpersonal focus of depersonalization by the work attitude aspects (Bakker et al., 2002).

Further, the dimension of professional efficacy correlates weakly with the other two burnout components, as well as with known correlates (Purvanova & Muros, 2010; Kalliath et al., 2000; Lee & Ashford, 1990, 1996; Enzmann et al., 1998; Shaufeli & Enzmann, 1998). Because of this, in recent years scholars have tended to focus mostly on the two components of emotional exhaustion and cynicism, and especially when comparing burnout levels among gender (e.g., Demerouti et al., 2001; Maslach & Leieter, 2008). In short, this means that both emotional exhaustion and cynicism, defined as types of strain, are now often viewed as the two core components of burnout.

According to Leiter and Maslach’s studies in 2016, where they claimed that burnout is an extreme stress phenomenon, they referred to burnout as being ‘’a fundamental crisis in the psychological connections that people establish with work’’ (Leiter and Maslach, 2016, p. 91). Demerouti and his research colleagues also stated that burnout is a long-term consequence of mental strain. Further, they explained how people in the state of burnout may make changes in their social life such as trying to deliberately avoid interactions with other people at work, low motivation and commitment at the workplace (Demerouti et al., 2002).

Mellner et al. (2005) argues that in the worst state of burnout it can often be seen in forms of headaches, back pain and loss of appetite. According to the structural equation model of Leung et al. (2011) they found that work stress (both objective and subjective), if it was not managed effectively, would lead to burnout. According to Benson (1974), burnout is so painful that many victims turn alcohol, drugs, gambling and sex to try and fill the terrible void that it leaves you. Hence, it is crucial to manage work stress without escalating to higher levels that result in further undesirable effects.

According to previous research, females working in projects are more prone to burnout, in the form of emotional exhaustion, than their male counterparts (Vlerick, 1996; Proost et al., 2004; Pinto et al., 2014). Some researchers suggest that women are more exposed to dimensions of burnout in more general organizational settings as well (Maslach & Jackson, 1981; Pretty et al., 1992).

On the other side, the researchers discovered that males were more prone to burnout in the form of cynicism. These findings were the same as what Purvana and Muros (2010) previously had found in their studies. Further, they stated that burnout in form of emotional exhaustion is easier to notice than burnout in form of cynicism and therefore it may seem like women are more exposed to burnout than men. They concluded with the fact that even as it may seem like females are more exposed to burnout that the results could be deceiving and that more research on the matter was needed (Pinto et al., 2014)

2.3.1 Stress vs. Burnout

After reading about stress and burnout one may wonder if there is any significant difference between the two phenomena. Clearly stress is due to individual's perception and reaction to stressors, as it all starts in the mind (Renaud, 2003, p. 157). As discussed, stress may have short-term and long-term effects on the individual, therefore it should be taken seriously if experienced and not allowed to persist. If stress gets to continue endlessly it escalates to a level that can cause irreversible harm and, in some cases, even be fatal to the individual (Alder, 2005, p. 146). On the other hand, burnout is said to be an end stage (Schaufeli et al., 2009a) in which where there used to be fire, we can now only see the char and debris with no heat or flame.

Table 2.1 displayed below seek to clarify the differences and effects of both stress and burnout respectively on an individual level. The table is retrieved from Ritacco et al. (2013, p. 801), who have adapted it from Aswathappa (2006, p. 502).

Stress	*Burnout*
The person feels fatigued	The individual encounters chronic exhaustion
The person is anxious	The individual is hypertensive
The person is dissatisfied with his her job	The individual is bored and cynical about the work
The person's job commitment has dropped off	The individual's job commitment is virtually nil; he/she is mentally detached from the organisation
The person feels moody	The individual feels impatient, irritable and unwilling to talk to others.
The person feels guilty	The individual encounters mental depression.
The person is having difficulty in concentrating; he/she tends forget things	The individual does not seem to know where he/she is; forgetfulness is becoming more frequent.
The person undergoes physiological changes such as increased blood pressure and heartbeat	The individual begins to voice psychosomatic complaints

Table 1 (2.1): *Stress Vs. Burnout table (Ritacco et al., 2013, p. 801).*

2.4 Social Support

Research show that social support is of growing interest as a potential approach to alleviate work stress and burnout. It might seem evident that better social support improves coping, but social support and its impact are complex (Cobb, 1976; Cohen & Syme, 1985). Researchers are divided in how social support should be defined and measured. Some definitions are more structural in character, pertaining to the number and frequency of relationship with others (Hammer, 1981). Others define social support in a more subjective way, in form and pertain to an individual's perception of the supportive quality of his or her social environment (Langford et al., 1997). LaRocco et al., (1980), found that there are many types of social support; emotional, empathy and understanding, provisions and informative and instrumental assistance.

They further identified that social support can improve employee responses on the work because it meets important needs, such as approval, security, affection and belonging, seen in another way, the positive effects of social support can outweigh the negative effect of work strains and burnout. Maslach et al., (2001), wrote that there is a consistent and strong body of evidence that a lack of social support can be linked to an increase in work stress and burnout. Of all the potential stress moderators, social support has probably received the most attention. Since social support has also been broadly defined as ‘’the resources provided by other persons’’ (Cohen & syme, 1985, p. 4), the most prevalent hypothesis is that social support buffers the interaction and relationship between stressors and stress outcomes. In the regards that high level of social support is thought to attenuate the magnitude of stressor-distress relationship.

An extensive literature review done by Cohen & Wills (1985), supported the claims of stress-buffering influence of social support. In addition, other researchers, such as Thoits (1986, p. 416), concluded that ‘’considerable research now indicates that social support reduces, or buffers, the adverse psychological impacts of exposure to stressful life events and ongoing life strains’’. Other researchers are more cautious, saying that there exists considerable variability among studies testing this hypothesis (e.g., Alloway & Bebbington, 1987; Barrera, 1988; Beehr & McGrath, 1992; Callaghan & Morrissey, 1993). So, even though social support has been tested a lot by researchers in the past, studies have either failed to support the buffering hypothesis or have found support for counter-buffering.

However, in some studies a lack of social support was found to have not only a moderating effect, but a direct effect on burnout (Bakker et al., 2004). One study also showed that the best predictor of burnout appeared to be dissatisfaction with the emotional support received from supervisors (Prince et al., 2007). Further, the direct effects models assume that social support and stressors act independent of one another on strains. Among the research on social support as having a direct effect on stressors and burnout, social support is seen as reducing the level of strain regardless of the intensity of the stressors (i.e., burnout) experienced. (e.g., Beehr, 1985; Cohen & Wills, 1985; Eisenberger et al., 1986; Eisenberger et al., 1990; Sullivan & Bhagat, 1992). Clearly, the debate on this topic is far from over and new research must be done in order to try and get an even better understanding of the effect social support has on stress and burnout.

2.5 Individual Performance

[By assessing performance]…"the individual can measure his comparative value as a worker and thereby determine his position among his fellow men" (Henderschott, 1917, p. 215).

Work performance is an essential concept in order to understand an individual's contribution to the organization and is defined as individual behavior that generates value for the organization (Campell et al., 1993). Another definition is that individual performance can be the record of a person's accomplishments (Armstrong & Baron, 2006, p. 15). The concept of work performance is a primary dependent variable in almost every area of organizational and management behavior. According to Campell and Wiernik (2015), individual work performance constitutes around one fifth of all dependent variables in these fields.

Further, how an individual performs (good or bad) has an impact on the overall profitability of the organization. Individuals doing their task as they should and are performing on, or above, an acceptable level are giving the organization a competitive advantage over others, as oppose to those not performing as expected, who are giving the organization a disadvantage (Ritacco, 2013).

Researchers and practitioners alike have spent vast amount of time and energy to measure, predict, and change individual work performance. While trying to do this, the fundamental question of ''what is individual work performance'' has had surprisingly little attention. And most of the attention that has been gathered is largely piece-meal (Carpini et al., 2017). Carpini recognized this problem and sought to fill the gap by first provide a comprehensive overview of the existing literature, then provide a comprehensive picture of performance, wrapping it all up by systematically mapping key predictors and outcomes of these types of performance.

In the first part, they tracked the literature on individual work performance 40 years back in time, and by using scientific mapping they displayed their findings. They concluded with the fact that while there seemed to be a large breadth of research related to individual work performance, the literature on the topic was fragmented and often appeard in silos (van Eck et al., 2010; Waltman et al., 2010; Caprini et al., 2017).

In the second part of their paper, they bridged the silos together in order to provide a comprehensive picture of performance. The researchers reviewed 97 existing performance constructs and systematically integrated them into a ‘’bigger picture’’.

The result they got by doing this suggested, consistent with Griffin et al. (2007) and Nuhn et al. (2017) findings, that there are three general types of individual work performance that accounts for most of the constructs in the literature (see Figure 2.1). These are; 1. Proficiency; the prescribed core elements of people’s work, this also includes the way people work with their colleagues in the way they achieve work-related outcomes. 2. Adaptivity; how people adapt to changing conditions. 3. Proactivity; how people initiate change in their work environment (Caprini et al., 2017).

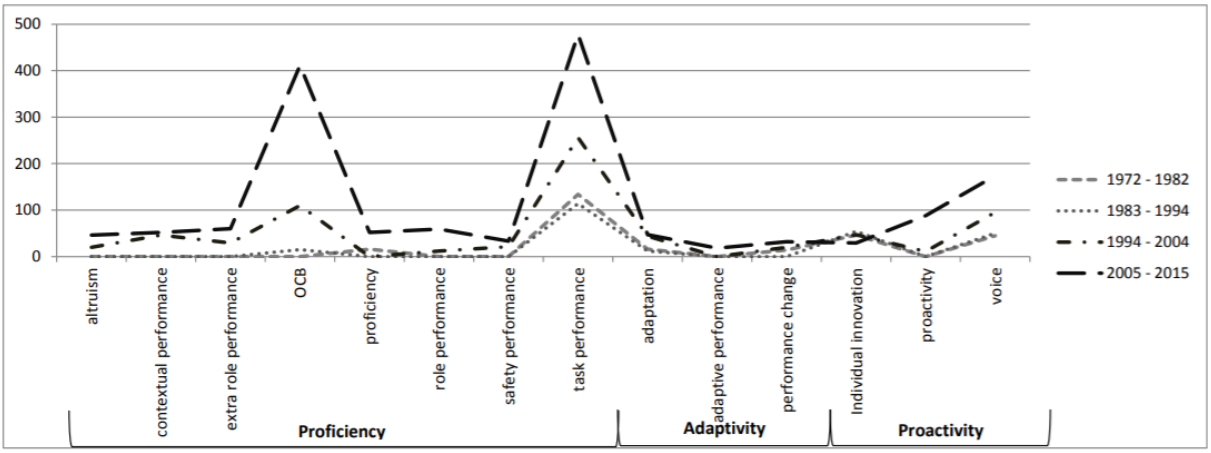

Figure 3 (2.1): *Occurrence of performance-related terms by temporal interval (Caprini et al., 2017, p. 98).*

These three types of individual work performance correlates well with project-based work settings, which often contains elements such as complexity, uncertainty and changing environment. These are all elements that require employees to react well to sudden changes in their workplace, as well as being able to adapt as their working conditions often changes. Employees will also need to be proactive, as it is even more important to implement those changes in a good way.

Since project-based work groups contains different people, with different sets of skills, first it is important for all the members to be good at what they do, and second, it is crucial that they can work with their colleagues in achieving work-related outcomes. This paper will contribute

with more knowledge in how stress and burnout impact the workers performance in a project group.

2.5.1 Individual Performance and Stress

According to Abramis (1994), stress may impact the individuals' performance differently. The literature on the relationship between stress and performance have reached no definite consensus among researchers. Among the main theories existing on job and performance, researchers are mostly agreed on that the inverted-U-theory relates to most situations. The inverted-U-theory suggests that stress is good to the point in which it becomes bad (Leung et al, 2008). Zajonc (1965) and Meglino (1977) found that there was a positive relationship between stress and performance for simple tasks, but that the inverted-U-shaped relationship applied to complex tasks involving many cues.

Other researches, such as Jamal (1984) and Abraims (1994) found a negative linear relationship between stress and performance. Further, while researchers found that too much stress had a negative impact on construction professionals (Leung et al., 2005; Friend, 1982; Jamal, 1984), too little stress was found to also have a negative impact in the form of boredom and a lack of concentration, initiative, or motivation, and if continued over time can lead to under stimulation (Cooper & Marshall, 1981; Gmelch & Chan, 1994; Varhol, 2000). As displayed in the inverted-U-model (Figure 2,2), only ‘’moderate’’ stress is considered to be healthy, useful, beneficial, and optimal in producing successful individual performance (Gmelch, 1982; Yerkes & Dodson, 1908; Selye, 1976; Leung et al., 2008).

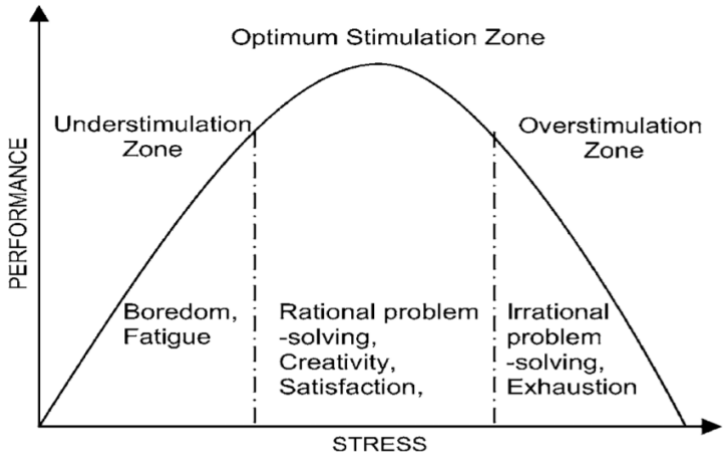

Figure 4 (2.2): *Inverted-U-shaped relationship between stress and performance (Yerkes and Dodson, 1908; Leung et al., 2005a).*

According to Leung et al. (2011), the relationship between stress and performance among CPMs is strong. In their research they categorize performance in three categories; task, interpersonal and organizational performance. Task performance involved the need for PMs to meet cost, time and quality targets. Interpersonal performance involved multi-stakeholders such as the clients, the design team, consultants, contractors and sub-contractors. Organizational performance involved comprising the actual output or results of an organization as measured against its intended outputs (or goals and objectives).

Moreover, organizational performance could be affected by the stress of PMs. Task and organizational performance were mostly affected by different levels of stress, such as work stress and burnout (Leung et al., 2011). In particular, the researchers reported that work stress affects task performance while burnout further affects the organizational performance.

Work stress can also in many cases be the indirect cause of other ills such as occupational sickness and injury, clinical depression, suicide and fatal heart disease (Alder, 2005, p. 146). For employees, work stress and the consequences are a cause of concern as they translate eventually into lost production hours for the employer and economic loss for the country (Ritacco et al., 2013).

2.5.2 Individual Performance and Burnout

Common sense and scientific research suggest that employees who are happy and engaged are more productive, than the ones that are unhappy and disengaged, and the happy-productive worker thesis implies that workers who are happy shows a higher level of work-related performance than workers being unhappy (Wright & Cropanzano, 2000). The reason for this is that happy workers, in opposite of unhappy workers, are more outgoing and helpful to others, and they are also more optimistic and confident (Cropanzano & Wright, 2001).

However, when workers are confronted with high work demands, high subjective stress or high objective stress, they use performance-protective strategies (Hockey, 1993). They achieve performance protection trough the mobilization of sympathetic activation (e.g., cardiovascular reactivity) and increased subjective effort (i.e., self-reports on having to mobilize many resources).

The use of these strategies prevents overt decrements in primary task performance. Hockey (1997) calls these attempts of people to sustain their performance standards "resistance to degradation.".

It should be noted that he success of these strategies is not guaranteed. According to Hockey (1993), many of the patterns of indirect degradation may be identified, and it is these identified patterns that ultimately lead to diminished performance. Some examples of patterns of indirect degradation are strategy adjustment (narrowing of attention, redefinition of task requirements), and fatigue aftereffects (risky choices, high subjective fatigue). Hockey (1997) states that the long-term effect of such compensatory strategy may be draining of an individual's energy resources, in turn leading to decreased individual performance.

Taris (2006) gives us two main reasons why burnout should lead to diminished work performance. First, work stressors or demands reduce individuals' capacity to exert control over their work environment, which in turn adversely affects their ability to function effectively (McGratch, 1976; Bakker et al., 2004). Further, burnout (especially exhaustion), may work as a mediator in the relationship of stressors with performance, because exhaustion is the depletion of individual energy resources. Thus, high degree of burnout (exhaustion) signify that workers possess insufficient resources to deal effectively with the demands of their work, leading to impaired work performance (Taris, 2006).

Second, the tenet of fatigue and that it represents the intolerance of any effort (Schaufeli & Taris, 2005). According to Thorndike (1914), fatigue is both the inability and unwillingness to expend effort, reflecting its energetical (exhaustion) and motivational (disengagement/depersonalization) components. Then, this explanation emphasizes that the depleted energy resources is not the only reason for negative performance, but also because of the unwillingness to perform. This is shown trough psychological withdrawal, in the form of increased resistance toward future effort, and is part of a protective mechanism set in motion to prevent the individual worker from spending more energy and thus entirely depleting themselves of all their resources (Meijman & Mulder, 1998; Taris, 2006). Workers who are burnout are unable and unwilling to expend effort, leading to suboptimal functioning and thus also impaired individual work performance (e.g., Leiter & Maslach, 2005).

2.6 The relationship between the variables

In this part, we are going to sum up the relationships between the independent, dependent, moderating and mediating variables in this study. This is based on relevant literature discussed earlier in chapter three, as well as literature that suggest and supports potential hypotheses. From this, we gain our hypotheses that will be either rejected or supported later in this thesis.

2.6.1 Subjective stress

As previously discussed, scholar suggests that stress, in different variations, can have a negative effect on performance. Stress can also develop into burnout. The literature also distinguishes between two categories of stress, objective- or subjective stress. Since there have been a lot less research done on the impact of subjective stress in project-based work we wanted to contribute with new insight on the matter.

Project participants often find themselves having to work long hours and are subject to tight deadlines and budgets (Lindgren & Packendorff, 2007; Andersson & Wickelgren, 2009). Many employees feel that they have to work long hours in order to prove themselves as this often is what separates the committed from the non- committed project worker (Andersson & Wickelgren, 2009).

These long hours, including the constant pressure that they are subjected to, can cause considerable stress, and without treatment further develop into burnout, thus it can be hard to balance project-based work with a traditional family life (Packendorff, 2002; Turner et al., 2008; Lindgren et al., 2014).

As noted earlier, stress is often regarded as negative, and should thus have a negative effect on performance. But it is possible for stress to have a positive effect on performance, depending on the amount of stress the employee experience. Scholars suggest that there is an inverted U-shaped relationship between the levels of stress and degree of performance (Leung et. al, 2007) We will look further into this as well, but for now, we are looking for the negative aspects. Further, we will contribute with our own research on subjective stress in project-based work and how it impacts the individual performance.

Based on the literature discussed, we hypothesize the following:

Hypothesis 1: *Subjective stress in project work is negatively related to project participants individual performance.*

Hypothesis 2: *There is a positive relationship between subjective stress and burnout.*

2.6.2 Burnout

Burnout is, as mentioned, a further developed stage of stress. Burnout is most appropriately considered a response to prolonged exposure to stressors on the job (Maslach et al., 2001). Unfortunately, few theories directly address the relationship between burnout and performance. Empirical research on this issue often relies on the assumption that burnout may affect organizational outcomes, stating that diminished performance could be among these outcomes. How particular measures of performance would vary with specific burnout dimensions is not usually discussed. One possible pathway linking job stressors and performance involves the notion that work stressors reduce an individual's capacity to exert control over their work environment, thus adversely affecting their ability to function effectively (McGrath, 1976; Bakker et al., 2004).

Burnout may then mediate this relationship, since it indicates the depletion of individual coping and energy resources. Thus, high levels of burnout signify that workers possess insufficient resources to deal effectively with the demands of their jobs, leading to impaired work performance (Taris, 2016). In the initial research model, we intend to study the relationship between burnout as a mediating variable, and performance on the individual level in project work. This study will further investigate the three aspects of burnout, based on the MBI (GS). The Burnout variable will be tested as the mediating variable for the relationship between subjective stress and individual performance.

Based on the literature, we have the following hypothesis:

Hypothesis 3: *Burnout in project work has a negative mediating effect on the relationship between subjective stress and individual performance.*

2.6.3 Social support

According to Karasek & Theorell (1990, p. 69) employees can receive social support from both colleagues and supervisors. Family and friends can potentially also provide social

support, reducing the effects of stress and burnout by knowing one have the support one needs from home. (Holahan & Moos, 1985).

Co-worker support is said to occur when co-workers help one another with their tasks when needed, when they share knowledge and expertise, as well as when they encourage and support each other. Working with helpful and supportive co-workers advances an environment where ideas and thoughts can be discussed open and freely (Joiner, 2007). A supportive work environment can often be characterized by co-workers that are highly involved in their work. Work environment can be explained by employees' realm of emotional cognitions, which can be assessed by whether or not the workplace is beneficial for the employees' personal well-being (Babin & Boles, 1996).

While some suggest that colleague and supervisor support are equally important, others suggest that they are not (Dawson et al., 2016; Hwang & Ramadoss, 2017). Since this study includes both project managers and project team members, we will look at both the work support (colleagues) and non-work support (family and friends).

In some studies, a lack of social support was found to have not only a moderating effect, but a direct effect on burnout (Bakker et al., 2004).

Based on findings made in previous studies (e.g., LaRocco et al., (1980); Maslach et al., 2001), it is shown that the positive effects of social support can outweigh the negative effect of work strains and burnout, and also that a supportive workplace can reduce stress (and burnout) and its negative effects on performance (Karasek & Theorell, 1990, pp. 345-346; Babin & Boles, 1996; Bowen et al., 2014; Dawson et al., 2016).

This review displays the important effect that social support, from co-workers, supervisors, friends and family can have. We can hypothesize the following;

Based on the literature discussed, we have the following hypotheses:

Hypotheses 4 a: *Social support has a negative moderating effect on the relationship between subjective stress and burnout.*

Hypotheses 4 b: *Social support has a positive moderating effect on the relationship between subjective stress and project participants individual performance.*
Hypotheses 4 c: *Social support has a positive moderating effect on the relationship between burnout and project participants individual performance*
Hypotheses 5 a: *Social support have a negative direct effect on burnout*
Hypotheses 5 b: *Social support have a positive direct effect on individual performance*

2.7 Research model and hypotheses

This study aims to assess the relationship between subjective stress, burnout and individual performance. This study contributes to the recent years focus on the potentially negative aspects of project-based work. Based on the theoretical foundations described in this study, it is right to assume that a high degree of subjective stress will have a negative relationship with individual performance. Further, a high degree of subjective stress over time may lead to burnout. Therefore, it is right to assume that subjective stress has a positive relationship with burnout. Burnout could, as a further developed state of stress, have a negative relationship with individual performance. Possibly even more so than subjective stress, according to research, as moderate amounts of stress could have a positive effect on performance. Based on the literature, burnout should have a mediating role between stress and performance.

Research about work-related stress and burnout would suggest several variables that could have a moderating effect. A moderating effect occurs when the moderating variable changes the strength and/or direction of the relationship between two variables in the research model (Hair et al., 2017, p. 228). In this study about individual performance, social support seems to be the common moderating variable, based on the literature, while also having a direct effect on burnout and performance. Research suggest that social support could have a moderating effect on all the relationships in this study; the relationship between stress and burnout, stress and performance, and burnout and performance.

Based on theory, we found that social support could have an important role in effective and stable project work environments. Practically, if social support buffers the relationship between i.e. subjective stress and individual performance, ensuring significant social support from the workplace, could ensure an increased level of individual performance. Based on the literature, we have the following research model and hypotheses:

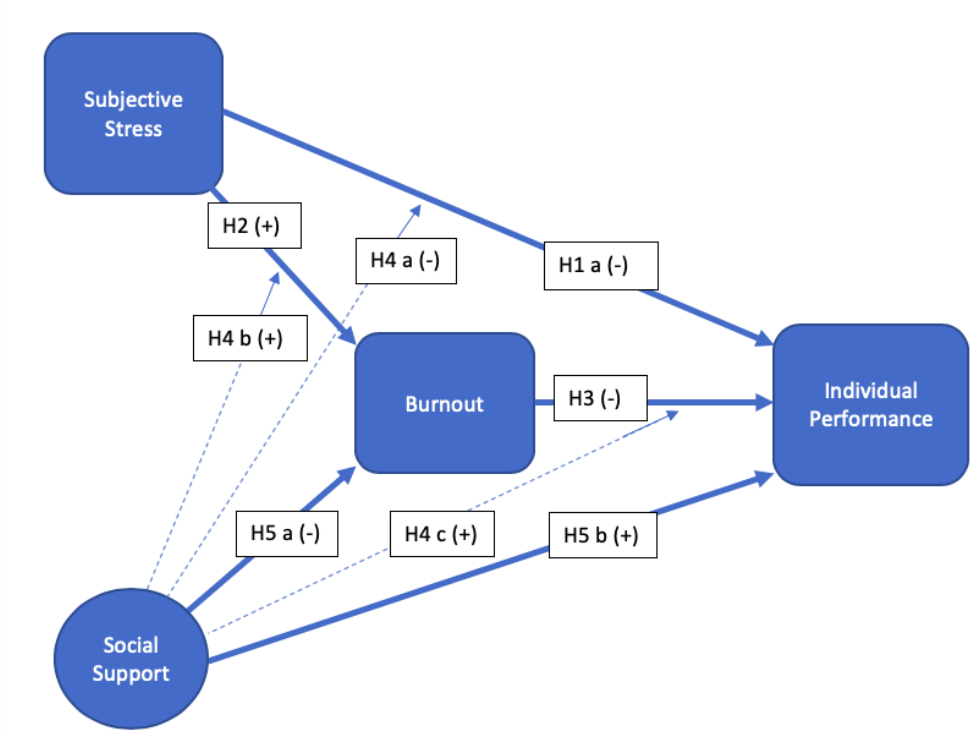

Figure 5 (2.3): *Hypothesized research model.*

H1: *Subjective stress in project work is negatively related to project participants individual performance.*

H2: *There is a positive relationship between subjective stress and burnout.*

H3: *Burnout in project work has a negative mediating effect on the relationship between subjective stress and burnout.*

H4 a: *Social support has a negative moderating effect on the relationship between subjective stress and burnout.*

H4 b: *Social support has a positive moderating effect on the relationship between subjective stress and project participants individual performance.*

H4 c: *Social support has a positive moderating effect on the relationship between burnout and project participants individual performance*

H5 a: *Social support have a negative direct effect on burnout*

H5 b: *Social support have a positive direct effect on individual performance*

3. Methodology

The following sections discuss the data collection procedure, the operationalization and measurement of the variables in the study, the preparation of the data material and the methods used to analyze it.

3.1 Data collection

The data collection was done through the web-based, self-report questionnaire of SurveyXact. We took a quantitative approach by using a questionnaire to collect our data. The aim of the data collection was to collect data in order to measure how project work exposure relates to employees' individual performance.

3.1.1 Online questionnaire

For our questionnaire, we used the online survey program SurveyXact. The respondents were asked to report their own perception of subjective stress, burnout, social support and individual performance, as well as other potentially relevant questions in regards of project work. The survey also contained question about the participants demographics and background.

An online survey has its benefits for this type of research. The respondents who have access to the survey can choose themselves when and where they would like to respond, making it more flexible for the respondents (Sekaran & Bougie, 2013, p. 147). The risk of respondents forgetting they have access to the survey is always present. Therefore, a reminder was sent out to all the respondents making it harder for them to completely forget about the survey. An online survey would also be much easier to distribute over large geographic areas, such as in this case.

Making respondents answer through an online survey, can be reassuring to the respondents in the way that one has the opportunity to make their answers completely anonymous and private, as there is no direct interaction between two persons when responding, such as in an interview (Bowen et al., 2014). The trouble here could be if the respondent faces technical issues or if they have important questions that needs to be answered in order for them to complete the survey (Sekaran & Bougie, 2013, p. 148). We made sure our email addresses were available for feedback and questions.

When creating our survey, we believed translating it would make it easier for potential respondents to complete the survey. We therefore created the survey in Norwegian, Swedish and English. Norwegian and Danish is very similar in written from, and some Finnish natives speak Swedish. For the people who found it difficult to read Norwegian or Swedish, such as many respondents from Iceland and Finland, an English option was provided. We were not able to translate the survey to other languages than those three, due to the limitations of this study. We saw that many preferred to use the translated version, rather than the English one, although it did not seem to help with our sample size. We also tried to make our survey as short as possible, although we would have liked to have asked even more questions to make the results even more accurate, it would not have been beneficial to do, because then we would potentially have risked respondents to suffer from survey fatigue and then they would not have completed the survey (Sekaran & Bougie, 2013, p. 148).

We made sure to add a precise definition of project (Schoper et al., 2018), as a project can be understood differently depending on the situation (Packendorff, 2002). The respondents were also asked to refer to their last completed project throughout the survey, to avoid confusion in regards of what project-role the participant had.

A copy of the questionnaire can be found in the Appendix A.

3.1.2 Sampling frame and distribution

When doing a quantitative approach such as done in this study, it is important to have a sample size that is big enough to give the statistical method a significant statistical power, so that the results can be generalized (Hair et al., 2017, pp. 23-25). When using PLS, the sample size should stay at least 10 times the numbers of arrows pointing at the latent variables (Hair et al., 2017, p. 83). This could be considered the absolute minimum. The recommendations, however, vary somewhat. Gripsrud et al. (2011, p. 140) recommend that a sample size should be around 200, as this is the most commonly used sample size. Based on our model, with 3 independent variables (including the mediating variable) and a maximum of 3 arrows point at a single construct, a sample size of 30 is absolute minimum, and a size of 103 is recommended by Cohen (Hair et al. 2017, p. 26). Hair et al. (2017, p. 25) recommend following the work of Cohen (1992) A sample size of this size using PLS-SEM will ensure a statistical power of 80%, a significance level of 5% and a R2 value of minimum 0.10.

For the sample of this study, we specifically needed employees who participate in project-based work. In order to reach out to as many project managers and project-team members as possible, we contacted 9 major project associations in the Nordic countries, who all agreed to help us. The questionnaire was distributed by the Project Management Institute (PMI) Chapters for Norway, Sweden, Denmark and Finland, as well as "Norsk Forenig for Prosjektledelse (NFP)", "Svensk Projektforum", "Dansk Projektledelse", "Project Management Association Finland" and "The Project Management Association of Iceland (VSF)". These organization have several thousand members all combined, estimated above 10.000 based on the information we received. They distributed our survey through different medias, which includes; newsletters, articles on their web sites, as well as direct emails and social media. We also contacted several different organizations and companies individually, as the sample size from the survey given to the association was not significant enough. We created a new survey, an exact copy of the one the associations received, which we distributed to the companies. By keeping their responses separate, we could test for statistical differences across the samples. The companies had similar strategies for distributing our survey, but mainly used emails and internal communication systems for distribution. With this approach, it was not possible for us to know exactly how many that received information and access to our survey, and thus we were not able to calculate the exact response rate. However, we did take into consideration the distribution and the completion rate, discussed later in this thesis.

One of the advantages by conducting an online survey and by using a self-selection sampling method is that our survey could potentially reach out to a high number of relevant respondents in a limited amount of time. (Sekaran & Bougie, 2013, p. 148, 252). However, the sample size cannot be generalized to cover a whole population accurately, as this sample would be considered a self-selecting sample, which is based on employees volunteering to participate. The self-selected sampling is categorized as a non-probability sampling method. This method is prone to self-selecting bias, where those who choose to volunteer often have strong opinions about the subject at hand. Thus, we risk that those who do not have strong opinions about the subject would choose not to participate, deeming the sample unable to generalize a whole population. (Gripsrud et al., 2011, pp. 136-137).

We further hoped to gather enough respondents from the individual Nordic countries to compare them, but as the response was very low, and finding and reaching out to enough relevant project organizations in foreign countries seemed to be too difficult and time consuming, given the limitations of this study, we ended up with a sample from the Nordic countries that we could divide in such a way that we were able to compare Norway to the rest of the Nordic countries combined. However, all of the Nordic countries are very similar in both culture and economy, so we did not expect to find any major differences (Leiter & Schaufeli, 1996; Gallie, 2003; Pinto et al., 2016).

The data for this thesis was collected for just about 2 months, between February 17th and April 15th. We discovered that while 217 employees had opened and answered the first question, only 119 completed the whole survey. This gives us a completion rate of 54,84%. It is suggested that a response rate of 30% or more would be acceptable in these sorts of data collection approaches. If we look at how many people completed, compared to how many SurveyXact registered as distributed (908), we could calculate a response rate of 13,11%. This could however be inaccurate, as there is no guarantee that the number of distributions equals the number of people who had access to our survey. There is no evident way to gather the response rate, given the approach and limitations of this study. We further ended up having a sample size above the minimum of 103 for our model, even after doing a very thorough data cleaning (Hair et al., 2017, p. 26). This would indicate that our sample would be statistically significant at a 5% level.

3.1.3 Research ethics and data protection

The data collected for this thesis was completely anonymous, as a measure for complying to research ethics and ensuring data protection. SurveyXact had the opportunity to create anonymous surveys, which we used. For the University of Agder, Norsk Senter for Forskningsdata (NSD) was the appointed Data Protection Officer for Research. To confirm that our research complied to research ethics and data protection, we did the NSD notification test. Our result was that we were "not subject to notification", and the results can be found in Appendix B. We made sure to inform the participants, both on the first page of the survey and during the distribution, that this survey was anonymous and no one outside the research team would have access to their responses.

3.2 Measurements of Variables

In our extended research model, Figure 5.1, the different variables and their respective items can be found. We have further gathered these in Appendix C, where the respective questions to each construct can be found. The survey itself can be found in Appendix A, as mentioned.

To ensure our study would be as reliable as possible, we based our survey and scales on already applied and validated scales. Only the demographics were self-created, although inspired by commonly used demographic scales. The scales we used were however somewhat modified, to fit our survey about project. We also wanted to make sure that the general information displayed in the survey was worded in such a way that the questions were as neutral as possible, so they would not affect how the respondents would answer. The scales (apart from the demographics) were measured using a seven-point Likert scale. This scale was applied in two ways; ranging from Strongly Disagree (1) to Strongly Agree (7) and ranging from Never (1) to Always (7). (Hair et al., 2017, pp. 9-10; Sekaran & Bougie, 2013, p. 211). The constructs, scale type and respective sources can be found in Table 3.1.

3.2.1 Independent variable

The independent variable in this study is the Subjective Stress construct. This construct is based on the research of Senaratne and Rasagopalasingam (2016), who further based their own research on subjective stress on the work of Leung, et al (2009).

Senaratne and Rasagopalasingams (2016) research focuses on the causes and effects of work stress in construction project managers, looking at both subjective, objective and psychological stress in relations to performance. The construct of subjective stress in this study is based on the three items from these papers. While the original scale is a five-point Likert scale, we decided to use a seven-point instead, because it appears to be more suited to electronic distribution of usability inventories (Finstad, 2010). No reports of Cronbach's alpha or Composite reliability was reported in their study. This scale has been modified slightly to fit this study better.

3.2.2 Dependent variable

The scale used to measure the dependent variable individual performance, was based on the work of Nuhn, Heidenreich and Wald (2017). Their research examines the performance outcome of turnover intentions in temporary organizations, on both individual, team and organizational level.

The constructs of performance in their study is based on the multidimensional measurement inventory from Griffin et al. (2007), while the sub-constructs performance on individual level is based on Chin (2010) and Becker et al. (2012), with items based on Griffin et al. (2007). The construct is measured by three sub-constructs with three items each: individual proficiency, individual adaptivity and individual proactivity. A seven-point Likert scale was originally used in their research.

The Composite Reliability of Nuhn, Heindenrich and Wald (2017) shows a value of 0.891 for individual proficiency, 0.866 for individual adaptivity and 0.918 for individual proficiency. The scales have been slightly modified to better fit this study.

3.2.3 Mediating variable

The mediating variable burnout is measured by 14 items, from the research of Yang et al. (2017), who based their job burnout scale on the items in the MBI-GS from Maslach et al. (1986). The construct is divided into three sub-constructs; exhaustion (five items), professional efficacy (six items) and cynicism (three items). A five-point Likert scale was applied in previous research, while a seven-point scale was applied for this study.

Some of the items were modified slightly, and professional efficacy was reverse coded. There was no Composite Reliability reported, but then we can look at the Cronbach's Alpha values, which holds a value of 0.845 for the burnout construct in Yang et al. (2017).

3.2.4 Moderating variable

In this study, the construct social support was tested for both direct effects and potential moderating effects. The construct is further divided into two sub-constructs; job support (4 items) and family and friends (2 items). Job support is adapted from the work of Bowen et al. (2014) about occupational stress and job demand, control and support amongst construction project workers. The family and friends scale were adapted from Todt, Wiss & Hoegl, (2018), who based their scale on the work of Spreitzer (1996). A five-point Likert scale was originally used in the original studies and adapted to a seven-point Likert scale for this study. The scales were further modified to better fit the study. Job support (and all others constructs in that study) was reported to have a Cronbachs alpha between 0.72 and 0.78, indicating scale reliability, while the Composite reliability reported for family and friends was at 0.79.

Construct and Scale	Type of Scale	Source
Subjective Stress: 3 items	Formative	Senaratne & Rasagopalasingam, 2017; based on Leung et al., 2009.
Burnout: 14 items - Exhaustion: 5 items - Professional Efficacy: 6 items - Cynicism: 3 items	Reflective	Yang, Li, Zhu, Li and Wu, 2017; based on Maslach et al., 1986.
Social Support: 6 items - Job Support: 4 items - Family and Friends: 2 items	Reflective	Bowen, Edwards, Lingard, Cattel, 2014 (Job Support) Todt, Wiss & Hoegl, 2018 (Family and Friends); based on Spreitzer, 1996.
Individual Performance: 9 items - Individual Proficiency: 3 items - Individual Adaptivity: 3 items - Individual Proactivity: 3 items	Reflective	Nuhn, Heidenrech and Wald, 2017; based on Griffin et al., 2007; Chin, 2010; Becker et al, 2012.

Table 2 (3.1): *Constructs, type of scale and respective sources.*

3.2.5 Control variables

In this study, a total of 14 control variables were used. The addition of control variables is important to see if there are other factors that could affect the relationship between the variables in the study. All 14 variables were measured using a single item, where both nominal scales and manually written answers adapted into interval scales were used. We asked the respondent to consider their latest completed project, as we did in all of the questions in the survey, when answering these questions.

Studies about project work suggest that demographic variables such as age, gender, education and marital status should be included as control variables (e.g. Bretones & Gonzales, 2011; Huhtala et al., 2011; Demo & Paschoal, 2016, Senaratne & Rasagopalasingam, 2017; Yang et al., 2017). Gender, education and marital status was measured using categories from previous research, while the respondents had to manually write their age. (D'Souza et al., 2003; Sekaran & Bougie, 2013, p. 156; Senaratne & Rasagopalasingam, 2017; Yang et al., 2017).

We then looked at the control variables that were relevant at an individual level, and some characteristics of the last completed project, such as years of experience with project-based work (Gällstedt, 2003; Senaratne & Rasagopalasingam, 2017), if they worked in an internal or external project (Turner et al., 2008; Lindner & Wald, 2011) what role the respondent had in their last project (Demo & Paschoal, 2016)., average working hours per week in projects (Huhtala et al., 2011; Bowen et al., 2014), and which country the respondent was based in during the lifetime of the project (Schoper et al., 2018).

We further looked at some general characteristics of the industry and organization the respondent worked for. Relevant variables were what economic sector to which the organization belongs to (Turner et al., 2008; Senaratne & Rasagopalasingam, 2017; Schoper et al., 2018), how many people are employed by the organization full time (Nuhn et al, 2017), the duration and the size of the projects the organization normally partakes in (Turner et al., 2008; Lindner & Wald, 2011), and how many projects were worked on simultaneously in the organization (Payne, 1995).

4. Data analysis

The data gathered from this research was analyzed by using the 3. generation of SmartPLS. By using SmartPLS, we were able to analyze multiple variables simultaneously and examine the relationships among the variables. We were further able to look at the items that were measuring these variables, all at the same time.

While we found sufficient research about stress, burnout, support, performance and projects, there was minimal amount of research about the combined topics of this research, and the interaction between these topics as variables. When analyzing this interaction, an exploratory technique of multivariate analysis would be deemed most feasible, and the method of partial least squares structural equation modeling (PLS-SEM) was used (Hair et al., 2017, pp. 2-3).

In addition, PLS-SEM works efficiently with a smaller sample size, given the requirements about sample size are met (Hair et al., 2017, p. 26). PLS-SEM does not make assumptions about the data either (Hair et al., 2017, p. 18).

In this section, we will further discuss how the data material was prepared for analysis, the data distribution, the evaluation of the measurement and structural models, the methods used for descriptive analysis and the analysis done in SmartPLS.

4.1 Preparation of data material and scale

After completion of data collection, the total respondents who completed the questionnaire were 119. There were 2 items who had 7 missing values in total, from these 119 respondents. In such a case where there are any missing values, it should be resolved. There are two ways of dealing with missing values. One could choose to remove these respondents entirely from the analysis. This might decrease variation of data and may introduce biases when certain groups of observations have been deleted systematically.

Optionally, one could use missing value treatment options, such as mean replacement (Hair et al., 2017, p. 19, 25). This requires a reasonable limit of values missing, less than 5% values missing is recommended per indicator. In our case, we had 4 missing values out of 119 values in total in one indicator, and 3 missing values out of 119 in total in another indicator.

Since there were so few missing variables, they should not prove to cause any statistical problems for our model, and mean replacement is an option. And since our sample size was greater than the required minimum of 103, even after removing the missing 7 values, removing these respondents were also an option. However, as our sample size were not as large as we had hoped for, we chose to avoid removing the respondents with the missing variables. We replaced the missing values using SPSS and considered them as full worthy completed responses, and included them in the analysis (Hair et al., 2017, p. 25). In our survey, we had an optional referral part, and another question following this about where they received information about our survey from. Some closed the survey when they came to the referral part, and therefore did not technically complete the questionnaire, as they missed the final question. This question was however not relevant for the variables, and thus all responses up to the referral part could be considered as completed. The final question was just for our own interest, giving us information about where the respondent received information about our survey from. This did not impact the result of our survey in any way.

To further quality check our data, we checked for inconsistencies and illogical responses. Based on feedback we received, certain questions could be slightly difficult to answer or somewhat confusing, such as questions about how many in the organization that worked in projects and how many projects worked on simultaneously in the organization. The respondents gave their best estimates, which we found for the most part acceptable. There were some illogical responses and some extreme values in these items, where for example one participant simply wrote "?" on two items, and another wrote that there were 43526 projects worked on simultaneously in their company with only 15 employees. In total, we removed 10 such responses. We further chose to remove another one of the respondents, as this participant wrote that they were mainly based in the USA during their last completed project, and we want to limit this research to project participants who were mainly based in the Nordic countries. Thus, out of the 119 completed respondents, we were able to keep 107 of them, and remained just above the minimum sample size of 103 (Hair et al., 2017, p. 26).

For this survey, a seven-point Likert scale was applied. We found from the literature that the majority of similar research was either done using a five-point or a seven-point Likert scale. We decided to be consistent and use the same scale for all items (except the items for control variables). We chose to use a seven-point scale as it appears to be more suited to electronic distribution (Finstad, 2010).

Psychometric literature suggested that having more scale points is better, but after around 11 points, there would be signs of diminishing returns (Nunnaly, 1978). Having too few points could cause respondents to have to settle for an alternative that not necessarily represents their opinion. A seven-point scale seemed to be a good balance, and we hoped this would provide more variety and distance between the respondents.

When using a Likert scale for structural equation modeling (SEM), it is important to fulfill the requirements of equidistance. The distance between the different categories in the scale have to be equal, in order to be similar to an interval-level measurement scale. To fulfill the requirements, we used a seven-point Likert scale, with the following categories used: strongly disagree (1), moderately disagree (2), slightly disagree (3), neither disagree nor agree (4), slightly agree (5), moderately agree (6) and strongly agree (7). We also used the seven-point Likert scale with the following categories for the questions where it seemed more

grammatically correct: never (1), almost never (2), rarely (3), sometimes (4), often (5), very often (6), always (7) (Hair et al., 2017, pp. 9-10).

4.2 Common Method Bias (CMB)

According to Burton-Jones (2009), common method bias is a subset of method bias that arises in quantitative research when the measured relationship between constructs is either inflated or attenuated compared to the actual value. This comes as a result of covariance that is caused by the measurement approach, not the measured trait or by the network of causes and effects in the model being studied (Koch, 2015). It is important to test for common method bias, as this could affect both the construct validity and the estimates of relationship between constructs. (Richardson et al. 2009). This study could be subject to CMB, as the data collected was done through self-reporting measures. Since CMB could serve as a potential explanation for the relationships in the model, we applied both procedural and statistical remedies to control and test for it (Podsakoff et al., 2003).

We controlled for CMB through a series of procedural remedies (Podsakoff et al., 2003; Koch, 2015; Spanuth & Wald, 2017). All scales and items used in this study are based on previous studies. This was a choice made to ensure that most of the items would be easily understandable and testable, and already have been applied and validated.

Further, the independent, mediating, moderating and dependent variables were physically separated in the questionnaire, so it would be easier to analyze. Lastly, the respondents' answers were anonymous, which decrease the likelihood of respondents editing their response to be more socially desirable or acceptable.

In order to check the dataset for common method bias, we ran the Harman´s single-factor test. This is computed in SPSS, by loading all of the measuring items for our latent variables into one single factor. From the Harman´s single-factor test, we know that the basic assumption is that if a substantial amount of common method variance is present, either a single factor could emerge from the factor analysis, or one general factor will account for the majority of the covariance among the item measures (Podsakoff et al., 2003).

Considering the latter, the general factor that emerges from the factor analysis in SPSS have to count for less than 50 % of the covariance, in order to prove that common method bias has minimal effect on the research model. From the data analysis we generated from the data

analysis of the latent variables, we received a common factor which counts for 28,40 % of the total variance. This is below the threshold of 50 %, thus giving a satisfying result. From this, we could conclude that there was no significant effect of common method bias in our model. It is important to note that while the Harman´s single-factor test is a widely used procedure, it is not without limitations. Podsakoff states that this procedure does not statistically control for (or partial out) method effects, and names it as an insensitive test. They recommend using other statistical remedies for controlling for common method bias. Therefore, we went forward with the Lindell-Whitney marker variable test as well.

The Lindell-Whitney marker variable test implements an unrelated marker variable into the research model. A high degree of correlation between the constructs in the study and the marker variable would indicate signs of common method bias (Lindell & Whitney, 2001). We conducted the test three times, with three different variables: Which industry did the respondents project belong to, if the projects were external or internal projects, and what level of education did the respondent have. Following a 6-step process for the marker variable test (Rönkkö and Ylitalo, 2011), we ran the test for these three new variables, separately.

The highest total variance of the common factor was 0.131, 0.128 and 0.019, respectively. This means that the maximum shared variance was 1.72%, 1.64% and 0.04%. If the variance were significantly higher, that could be an indicator for common method bias. These numbers are very low, thus considered satisfactory.

Even though this process receives more recommendation than the Harman´s single-factor test, there are still some conceptual and empirical problems to this approach of testing for common method bias (Podsakoff et al., 2003). We believed however that when both of these two approaches for testing for common method bias told us that our results are not significantly affected, we believed this combined with procedural remedies, should suffice and give acceptable results. One could also follow Kock's (2015) approach for CMB testing, where he deliberately contaminated a sample with CMB, for then to compare this new sample to the original one. This would also provide clear evidence of CMB, if any is present. Again however, the approaches we have chosen are both valid and satisfactory, so we believed that should suffice.

For increased statistical validity, we wanted to compare our sample from the associations to the sample from the companies. This was to make sure there were no major differences in the

responses received, as the survey was distributed with two different approaches. To test this, we conducted a two sample T-test, as done by Armstrong & Overton (1977). They originally conduced the test to compare early and late responses as subsamples, and test for nonresponse bias. In our case, the subsamples would be association sample and company sample. We used SPSS for this. We found that there were generally minimal to no difference in how the people responded. However, on two items from the stress scale (item 3.1 and 3.2), we saw that the appropriate p-value was below our significance level of 5%. This would indicate that there would be a significant difference in what the respondents answered on those questions, based on whether they received the survey from the associations or the companies directly. The mean difference is at 0.9313 on item 3.1 and 0.9683 on item 3.2. On a seven-point Likert scale, that would indicate that the respondents from the associations scored almost a full point higher in subjective stress than the respondents from the companies. It could be interesting to note that the mean for both the companies (2.097) and the associations (3.029) are quite low in general, which could be interpreted that the respondents feel less affected by subjective stress in general.

Further, the sample size was generally low (a cleaned total of 107), with the majority of responses coming from the companies. A larger sample from the associations could affect the mean difference. Other than these two items in the subjective stress scale, all appropriate p-values were higher than our significance level at 5%, thus indicating no significant difference in responses.

4.3 Partial Least Squares - Structural Equation Modeling (PLS-SEM) and Model Specification

It is important to correctly evaluate the model when using PLS-SEM. A multi-stage process should be conducted. This includes a model specification, and an evaluation of both the inner model and the outer model.

In PLS-SEM, one can upload a dataset, and create a path model based on this dataset. The relationships and hypotheses can be visually displayed in such models. In our model, the constructs that are not directly measured are visualized as circles. These circles are considered the inner (structural) model. The items that are directly measured are visualized as numbers. These numbers make up the outer (measurement) model. To visualize the relationship, arrows

are drawn in the direction to or from the constructs and items, depending if the specific construct is a formative or reflective construct (Hair et al., 2017, p. 11).

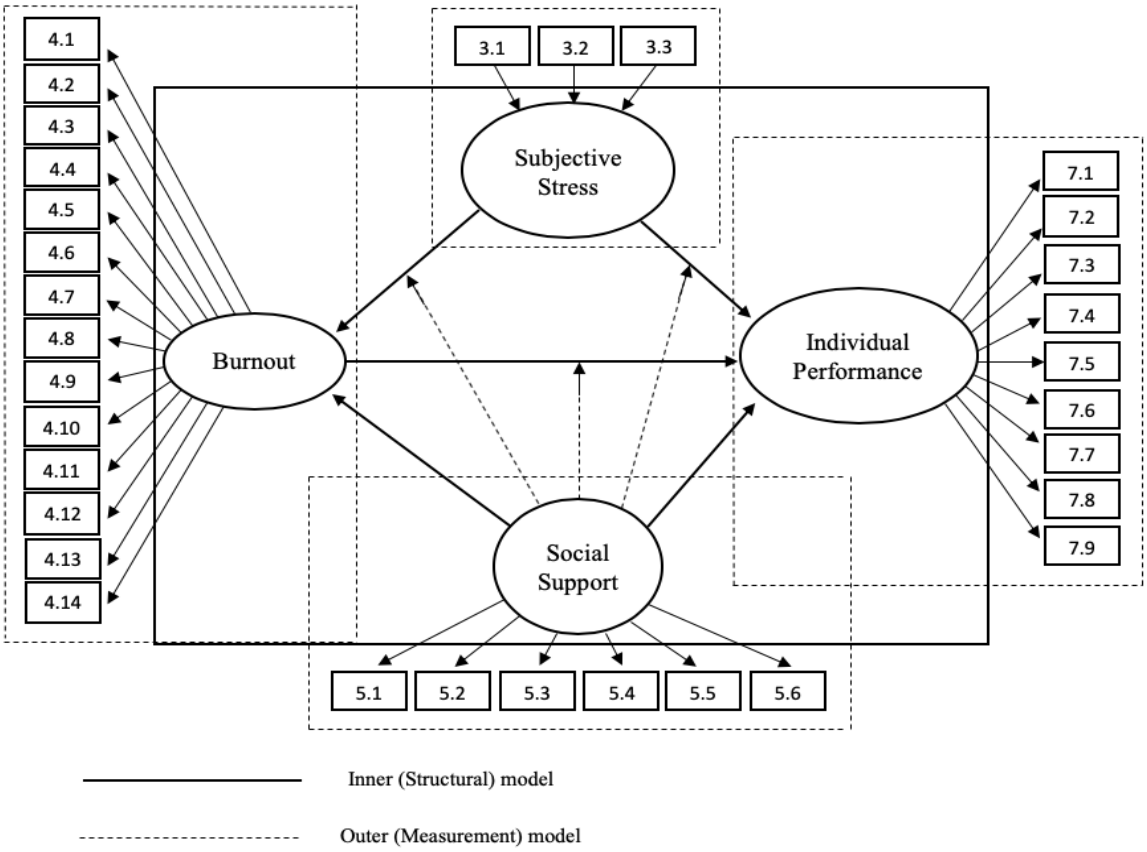

Figure 6 (4.1): *Structural and measurement model.*

In our research, we would also like to look more specifically on the different aspects of burnout, and how they affect individual performance. Therefore, the 14 items that is measured by the burnout construct could be divided into three lower-order constructs; exhaustion, professional efficacy and cynicism (Yang et al., 2017). The three constructs could be illustrated as in Appendix D. Social support could also be divided into two lower-order constructs; job support and friends & family (Bowen, et al., 2014; Weiss & Hoegl, 2017). This is illustrated in Appendix E. The 9 items for individual performance was also be divided into three lower-order constructs, as noted earlier. Individual proficiency, individual adaptivity and individual proactivity (Nuhn et. al, 2017). This could be illustrated as in Appendix F. These illustrations visualize the items in the outer models.

The scales used in this study were mainly reflective, with the exception of our independent variable Subjective Stress, which was formative. If the scales are reflective, all items are

expected to correlate, and the direction of the relationship is from the construct to the items. (Sekaran & Bougie, 2013, p. 230).

Formative scales are however not expected to correlate, as the items are usually not casually related. One could think of the formative scales of having "formed" the latent property already in the past. As illustrated in Appendix D, E and F, the underlying dimensions of the construct burnout, social support and individual performance are all reflective. It is not necessary to model these lower-order constructs as separate constructs (Becker et al., 2012). This is why we chose to keep our original model as in Figure 4.1 and keep the lower-order constructs as separate models. While it is not necessary, it is possible to use these lower-order constructs in a complete model, in order to look into detail which underlying dimensions have greater significance and effect (Demo & Paschoal, 2016).

4.4 Data distribution

PLS-SEM does not normally make assumptions about the data distribution, as it does not require data to be normally distributed. However, it is advised to verify that the data are not too far from normal. Extremely abnormal data could be problematic when assessing the parameters significances and will inflate standard errors. To ensure the data is not extremely abnormal, we have to look at the skewness and kurtosis of our data. Skewness assesses the extent to which a variables distribution is symmetrical, while kurtosis measures whether the distribution is too peaked and not sufficiently spread out. The closer the skewness and kurtosis are to zero, the better, but the distribution should be considered normal if the values are between -1 and +1 for both the skewness and kurtosis. Any value lower than -1 or higher than +1 in skewness shows and indication of skewed distribution, and in kurtosis will this indicate whether the value is too flat or too peaked. (Hair et al., 2017, p. 61).

When analyzing our data for skewness and kurtosis, we focused on the items in our model illustrated in figure 4.1. Items 3.1, 3.2, and 4.5 had a skewness slightly above +1, while the items 4.6, 4.8, 4.10 and 7.3 had a skewness slightly below -1. Item 4.6, 4.7, 5.4 had a kurtosis of just over +1. No items had a kurtosis below -1. Item 4.8, 4.9 and 7.3 had however very high kurtosis, with a value of 2.920, 2.328 and 4.484 respectably. As PLS-SEM does not make assumptions about the data distribution, these results will most likely not lead to any problems. The reliability and validity of the data will nevertheless be assessed further in the

following sections. A full overview of the kurtosis and skewness of our data is added in the Appendix G.

4.5 Evaluation of the measurement (outer) model

When the survey was created, the questions and scales were based on already established scales. In such cases where they are directly based on established scales, it is not necessary to test for validity or reliability, as this is already established previously (Sekaran & Bougie, 2013, p. 225). In our case, we had to modify these scales somewhat to fit the purpose of this research, more specifically to fit in regard to project work. It is therefore advised to re-evaluate validity and reliability, to ensure the modification are not significantly different from the original scales.

Most of the constructs in the model of this study are reflective variables, with the exception of the independent variable of subjective stress. The reflective variables can be assessed on their internal consistency reliability and validity, through PLS-SEM. First step is to check whether or not the algorithm of PLS-SEM converged (Hair et al. 2017, p. 123). We ran the PLS-SEM algorithm with 300 iterations, as recommended. If the algorithm converges before the 300th iteration, it means it found a stable solution., which in only rare cases it is not able to do (Henseler, 2010). The algorithm found that our model converged after 11 iterations, which is satisfactory, and we may proceed with testing reliability and validity.

For reliability, we had to check for two types of reliabilities: Internal consistency reliability and indicator reliability. For internal consistency reliability, Cronbach's alpha and Composite reliability would measure this. Cronbach's alpha has however some limitations. It is therefore advised to look at the values from the Composite Reliability instead (Hair et al. 2017, p. 111). We have listed both in figure 4.5, but will focus on the Composite Reliability, as this is considered more technically appropriate. The Cronbach's alpha does not take into account the outer loadings of the variables, while Composite Reliability does.

The Composite Reliability will have a value between 0 and 1, however there are some rule of thumbs to consider. Values between 0.7 and 0.9 are desirable, while values between 0.9 and 1 might indicate that the constructs are measuring the same phenomenon (Hair et al., 2017, p. 112).

The threshold for acceptance is 0.7, so values between 0 and 0.7 will not be considered reliable. Table 4.1 illustrates the Cronbach's Alpha, Composite Reliability and the Average Variance Extracted for all the reflective constructs.

Subjective stress was a formative construct and it was therefore not possible to assess reliability and validity through these methods. This will further be discussed below. All values in this model were between 0.7 and 0.9, except for exhaustion and individual proactivity, who had a composite reliability of 0.930 and 0.953 respectively. This indicated that the items for exhaustion and individual proactivity might be too similar. The SmartPLS program indicated these values as acceptable values, however. This was also supported by Hair et al. 2017, who found it acceptable, although these values might not be considered most desirable (Hair et al., 2017, p. 112).

Construct	Cronbach's Alpha	Composite Reliability	AVE
Subjective Stress	-	-	-
Burnout	-	-	-
Exhaustion	0.904	0.930	0.726
Professional Efficacy	0.823	0.873	0.542
Cynisism	0.712	0.836	0.632
Individual Performance	-	-	-
Individual Proficiency	0.721	0.842	0.639
Individual Adaptivity	0.760	0.863	0.680
Individual Proactivity	0.925	0.953	0.870
Social Support	-	-	-
Work Support	0.757	0.846	0.578
Non-work support	0.725	0.879	0.784

* All values in green are desirable values

** All values in in black are acceptable values

Table 3 (4.1): *Reliability and Validity.*

Next step was to look at the outer loadings of the items, to assess the indicator reliability. Indicator reliability would also measure the convergent validity. If the values would be valid, the scale measured the construct they were supposed to measure (Sekaran & Bougie, 2013, p. 225). If the outer loadings were not statistically significant, they should either be removed or considered removed, based on the value they had. If the outer loadings would be below 0.4, they should be eliminated.

If they were between 0.4 and 0.7, removal of these items should to be considered. This would depend on the potential effect of removing them. (Hair et al., 2017, p. 113). We found that items 4.9 and 4.11 for professional efficacy, and item 7.6 for individual adaptivity had a lower outer loading, with the value of 0.509, 0.601 and 0.684 respectively.

These values were between 0.4 and 0.7 and could therefore be considered acceptable. After considering the potential effect of removing these items, we decided to keep these three items. Since no items were below 0.4, and we decided to keep the three items between 0.4 and 0.7, no items were eliminated. Convergent validity and indicator reliability were established for all constructs in our model.

Convergent validity is a part of construct validity, together with discriminant validity. Construct validity concerns to what extent the results obtained using the measure is consistent with the theories which the study is built on. Convergent validity is assured when two different items measuring the same construct is highly correlated (Sekaran & Bougie, 2013, p. 227). In cases where the construct is reflective, the items measuring it can be considered as different approaches to measure the same constructs. They should be somewhat similar, in the way that they should converge, or that they should share a high proportion of variance. Convergent validity for reflective constructs can be assessed by considering the outer loadings of the indicators, often called indicator reliability, and the Average Variance Extracted (AVE).

The Average Variance Extracted should have a value of 0.5 or higher (Hair et al., 2017, p. 115). This will indicate that the construct explains more than half of the variance of its respective items. All AVE values for the reflective constructs were above 0.5 and were then acceptable, proving that the convergent validity was established.

The construct subjective stress was not a reflective construct, but a formative one, and would therefore not provide a value when looking at Composite Reliability or AVE. To evaluate the formative construct, we had to look at the outer weights, rather than outer loadings. If the P-values were below 0.1 (preferably below 0.05), that would indicate that convergent validity was established for this construct. For item 3.2 and 3.3, they were very satisfactory below

0.05. But we did face a validity issue with item 3.1. The P-value of item 3.1 was slightly above 0.1, with a value of 0.124. This was unsatisfactory, and one could consider removing this item.

Item	P Values
3.1	0.128
3.2	0.000
3.3	0.002

* All values in green are desirable values
** All values in red are above desired value

Table 4 (4.2): *Outer weights for subjective stress.*

Statistically, with a value above 0.1, it might not have an effect on the construct, and thus should affect the construct minimally if removed. It is however believed that removing a formative item has bigger consequences compared to removing a reflective item and should therefore not easily be done. If the value was significant higher, i.e. a value of 0.5, the recommendation would normally be to remove it. In cases where the formative item might not be significant, we need to check the P-value of the outer loadings, by going back to the Bootstrap in SmartPLS (Hair et al., 2017, p. 180).

The P-value of all the outer loadings were at 0.000, indicating that all loadings were significant at a level of 1%, including item 3.1. Thus, we were able to keep the indicators in the formative construct, even though the outer weights of one of our items might not be significant (Hair et al., 2017, p. 180). This was supported by prior research and theory (Eberl, 2010; Schwaiger, Sarsdedt & Taylor, 2010).

Next step was to look at the Variance Inflation Factor (VIF) values. For a formative construct, we looked at the Outer VIF Values to evaluate validity. If a VIF value was at 5.0 or above, that could indicate validity issues. Below 3.0 is most desirable, while values between 3.0 and 5.0 would be acceptable (Hair et al., 2017, pp. 143 - 144). All the values in Table 4.3 were desirable below 3.0.

Item	Outer VIF
3.1	1.554
3.2	1.714
3.3	1.138

* All values in green are desirable values

Table 5 (4.3): *Outer VIF values.*

After testing for convergent, validity, discriminant validity was checked. Discriminant validity is assured when theory predicts that two constructs are not correlated, and the results obtained by measuring these constructs indicates the same (Sekaran & Bougie, 2013, p. 227).

To assess discriminant validity, we first had to look at the cross-loadings. The cross-loadings should have the highest loading with the construct it is supposed to measure. The cross-loading should also not exceed the outer loadings (Hair et al., 2017, pp. 115-116). All of our items had the highest loading for the constructs they were supposed to measure, which indicatec that discriminant validity is established. Both the cross-loading table and the outer loadings can be found in Appendix H and I.

Further, we checked the cross loadings for the reflective constructs, using the Fornell-Larcker criterion and the Heterotrait-Monotrait Ratio (HTMT). The Fornell-Larcker criterion is a widely used and traditional approach, but the HTMT statistics are recommended instead, as these statistics avoid the shortcomings of the Fornell-Larcker Criterion (Hair et al., 2017, p. 171). The HTMT statistics is also recommended when the model contain both formative and reflective constructs, as these statistics completely ignore the formative constructs, and will therefore remain unchanged if formative constructs were added to a model with otherwise reflective constructs. The Fornell-Larker Criterion and the HTMT Ratio can be found in Appendix J. The values in the Fornell-Larker Criterion suggest the square root of AVE for each of the constructs should not exceed the highest of the correlations that the different constructs in the model have with each other. Looking at the Fornell-Larker Criterion, the square root of AVE for each of the constructs did not exceed the highest of the correlations that the different constructs had with each other. This indicated discriminant validity. When looking at the HTMT Ratios, the values should stay minimum below 0.90, but preferably below 0.85 (Hair et al., 2017, p. 172). In our model, all HTMT values were below 0.85, and we have established that our model exhibit discriminant validity for the reflective constructs.

For formative constructs, there were no clear recommendations on how to assess the discriminant validity (Henseler, Ringle & Sarstedt, 2015: 131). Previous research has however made suggestions, to i.e. examine the cross-loadings for formative items (Klein & Rai, 2009). Comparable to reflective items, formative items should correlate more highly with the score of their composite constructs.

However, it was recommended to seek alternative means to consider formatively measured constructs when assessing discriminant validity (Henseler, Ringle & Sarstedt, 2015: 131). In our case, the formative items did correlate highest with the score of their respective constructs.

With the exception of the discriminant validity of our formative construct, we have assessed internal consistency reliability, indicator reliability, convergent reliability for all constructs, and the discriminant validity of our reflective constructs, which are all established.

4.6 Evaluation of the structural (inner) model

The structural model needs to be tested for collinearity issues. This is to ensure the path coefficients are unbiased (Hair et al., 2017, pp. 193-194). In order to ensure this, we looked at the Variance Inflation Factor (VIF), more specifically Inner VIF Values. Similar to the Outer VIF Values, we wanted values below 5.0, to avoid collinearity problems. Preferably, we wanted values below 3.0, but values between 5.0 and 3.0 was acceptable, as mentioned earlier. We wanted to look at the VIF values for our dependent variable. We also added the mediating variable, to check the VIF value for subjective stress and social support in this construct. All the items in our model generated a VIF value below 3.0 and are considered very good, as illustrated in Table 4.4 (Hair et al., 2017, p. 194).

	Mediating Variable	Dependent Variable
Subjective Stress	1.320	2.608
Burnout	-	-
Cynisism	-	1.844
Exhaustion	-	2.819
Professional Efficacy	-	1.256
Social Support	-	-
Work Support	1.455	1.567
Non-Work support	1.228	1.294

Table 6 (4.4): *Test for collinearity issues.*

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4.7 Descriptive Analysis

Next step was to get an optimal overview of the data material gathered in this study. In order to do this, we conducted general descriptive analysis. We used Excel to analyze the collected data. From Excel, we could investigate the relationship between control variables and our latent variables.

Some of the items in the questionnaire that was created and used in our study, were already divided into categorical scales in the questionnaire. Based on the literature the scales were collected from, these categorical scales and intervals can be used for analysis as well. The items that where self-reported, where the respondents had to manually write to respond, were organized into interval scales manually in Excel.

The control variable "Age" was organized into the following intervals: "≤ 29 years", "30 – 39 years", "40 – 49 years" and "≥ 50 years", based on the intervals from Bretones & Gonzales (2011). We also wanted to look at weekly project working hours and project duration as control variables. As there seemingly were no previously conducted research using intervals relevant for this study, we generated intervals based on the data from the respondents. Project Working Hours were organized into intervals of 10, from "≤ 10 hours" up to "≥ 50 hours". Project Duration was organized into intervals of 3 months, from "≤ 3 months" up to ≥ 24 months".

4.8 Methods for testing the hypothesized model

In the following section, the hypothesized direct relationships will be tested by checking the size and significance of the path coefficients, the coefficient of determination (R^2), the f^2 effect size, the predictive relevance (Q^2) and the q^2 effect size. To complement the PLS-algorithm we also used both the bootstrapping and blindfolding procedure in the analysis (Hair et al., 2017, pp. 191-192).

In order to test the impact of the moderating variables we considered the interaction effects of the independent variable (project demand) and the different moderating variables. As our model only included reflective constructs, we used the orthogonalizing approach.

We chose to use this approach in order to minimize estimation bias and to get as accurate results as possible.

Before doing the moderating analysis, the moderating variables had to meet the requirements of internal consistency reliability, indicator reliability, convergent validity and discriminant validity. As discussed in the section of "evaluation of the measurement models", all of the variables in the model met these criterions (Hair et al., 2017, pp. 253-255).

In addition, the effect of two of the control variables on the hypothesized model was analyzed applying multi group analysis (MGA) in PLS-SEM. The MGA was run using a significant level of 0.05 and 500 subsamples (Hair et al., 2017, pp. 291-294). The control variables included in this analysis were the respondent's gender and project role, both variables were considered using the categorical scales from the questionnaire.

4.9 PLS-MGA: Control variables

In this section the multi group analysis (MGA) will be presented, it will be done using the PLS-SEM in order to explore the impact and possible moderating effect of the control variables gender and project role. By doing an MGA it is possible to take the heterogeneity of the data into consideration, which also decrease the chances of making the wrong conclusions (Hair et al., 2017, p. 291).

4.9.1. Gender as a control variable

As displayed in Appendix K. the predictive power (R^2) was close to moderate for both groups in regards of the burnout, while it was a little lower on individual performance (Hair et al., 2017, p. 199). However, the variables in the model in regard of burnout had a slightly higher degree of predictive power for the male group than for the female group. While we saw the opposite in the regards of predictive power on individual performance, whereas female had a slightly higher value than men.

Applying the MGA in PLS-SEM one can assess whether the differences between the subsamples are statistically significant or not by looking at the differences in the path coefficients and the p-values (Hair et al., 2017, pp. 291-293). As shown in Appendix K the differences in the path coefficients were fairly small for most of the relationships, the highest value was found in ‘’Moderating Effect SBI ->Individual Performance’’ (0.259).
Looking at the p-values, the difference is considered to be significant when the p-value is either above 0.95 or below 0.05 (Hair et al., 2017, pp. 291-294). This indicates that when considering the subsamples of gender none of the differences are significant.

4.9.2 Project Role as a control variable

For the purpose of the MGA, we took the 5 respondents who answered “other” in regards of their role in the project and placed them in the project-team member group, as these respondents had a difficult time defining their role. All of them defined themselves as both project-team members and PMs, and since one of their roles involved being regular team-members we saw it fit placing them as project-team members and not purely as PMs.
Looking at Appendix K, one can see that the predictive power (R^2) was moderate for all the groups, except in the PM to individual performance groups, where the value of 0.274 was considered as low (Hair et al., 2017, p. 199).

Looking at the difference in the path coefficient for the burnout effect on individual performance we found a difference of 0.325, while the differences in the rest of the path coefficients seemed to be less. Further considering the p-values in order to assess whether the differences were significant or not, one could see that the p-values are all between 0.302 and 0.811. This indicated that none of the differences are significant.

5. Results

The questionnaire was answered by 217 participants. However, only 119 had completed it. This gave us a completion rate of 54,38 %. After removing the respondents with extreme or unusable values, we were left with 107 respondents which we could use in our analysis. We will in this part of the thesis further present the descriptive statistics of our sample, the analysis of the relationship between the control variables and the independent and dependent variables, as well as conduct a hypothesis testing. The results, tables and figures in this section consider stress and burnout as two constructs, i.e. the mean of the items measuring the three underlying dimensions; emotional exhaustion, cynicism and professional efficacy, whereas the professional efficacy items are reversed.

5.1 Descriptive statistics

Table 5.1 presents the demographic characteristics of the sample used in this study. The average age for the participants in this survey was 47,71 (66%) of them were male and 36 (34%) female. Further, 90 (84%) of them answered that they were either married or living with a partner, while 17 (16%) answered they were single or living alone. Furthermore, the share of participants who worked as project managers were at 78 (73%), while only 24 (22%) answered they were project-team members, 5 (5%) of the individuals also answered others, most of the people answering others worked both as a project-team member and project manager.

Looking at the industry chart, almost ¼ of the participants worked in the ‘’Construction’’ industry, next came the ‘’Oil and Gas, Energy, mining’’ industry with its 18 response, followed by ‘’Public Sector/Education/Health Care’’ industry with 17 respondents. ‘’Manufacturing’’ had 13, ‘’Information & communication’’ had 11 and the rest had between 1 and 8 respondents.

Furthermore, 29 of the respondents were involved in internal projects, 33 in external and 45 answered they were involved in both. 77 out of 107 respondents were working in projects in Norway, while 30 were working in project based in either Sweden, Denmark, Finland or Iceland. The rest of the demographic characteristics of the study sample can be found in table 5.1.

Variable	n	%		Variable	n	%
Age				*Project role*		
≤ 29 years	6	5		Project manager/project leader	78	73
30 - 39 years	20	19		Project-team member	24	22
40 -49 years	30	28		Others	5	5
≥ 50 years	51	48				
				Industry		
Gender				Manufacturing	13	12
Male	71	66		Construction	24	22
Female	36	34		Oil and Gas, Energy, Mining	18	17
				Retail, Transport, Warehousing, Hospitality, Tourism	7	7
Marital Status				Banking, Financial Services & Insurance	3	3
Married/living with a partner	90	84		Information & communication	11	10
Single/living alone	17	16		Other Services (excluding financial)	4	4
				Fishery, Forestry, Agriculture	1	1
Level of education				Public Sector/Education/ Health Care	17	16
High school or below	16	15		Non-Governmental Sector (NGO) / Non-Profit	1	1
Bachelor or equivalent	41	38		Others	8	7
Master or higher	50	47				
				Country mainly based in		
Type of project usually invovled in				Norway	77	72
Internal	29	27		Rest of the Nordic countries (SWE, DEN, FIN, ICE)	30	28
External	33	31				
Both	45	42				

Table 7 (5.1): *Demographic characteristics of the study sample.*

By looking at Table 5.2 one can see that the respondents vary quite a bit in regards of the size of their firm. According to the European Commission, ‘’SME’’ stands for small and medium-sized enterprises. It can be categorized by number of employees and either turnover or balance sheet total (European Commission, 2014), we have categorized the respondents based on their answer on the question on ‘’ How many people are employed by your firm? (Please specify to the best of your knowledge the number of full-time equivalent (FTE) if possible).’’ As displayed in Table 5.2 two of the participants were working in a Micro firm with less than 10 employees, 19 in small enterprises, 26 in medium-sized enterprises, and 60 of them answered they were working in companies with more than 249 employees, shown in the table as ‘’Large’’.

Size of firm by the number of employees	n	%
<10 (Micro)	2	2
< 50 (Small)	19	18
< 250 (Medium-sized)	26	24
≥ 250 (Large)	60	56

Table 8 (5.2): *Size of firm by the number of employees.*

One can see in Table 5.3 that the respondents had, in average, 18 years of projected-based work experience, with a standard deviation of 9. They worked 32 hours a week in project-based work, with an average of 43 members in their project groups, we note a slightly high standard deviation of 93 as this variable variated in line with how big the company was. Furthermore, the average duration of projects worked on were 15, and the average numbers of project worked on simultaneously in the companies were 63, with a standard deviation of 108, also here the standard deviation is reflecting the difference in size of the companies.

Variable	Mean	Standard Deviatior
Years of experience with project-based work	18,03	9,28
Total working hours per week in project-based work	32,20	12,46
Average duration of projects worked on (in months)	14,81	13,91
Average number of members in the project group	43,26	93,44
Average numbers of projects worked on simultaneously (in the company)	63,21	108,14

Table 9 (5.3): *Descriptive characteristics of the respondents working-life and of the projects worked in.*

5.2 Relationship between control variables and the independent variables

This section considers some of the most interesting tendencies between the independent and control variables. As Stress, Burnout and Individual Performance were all measured on a seven-point scale ranging from strongly disagree (1) to strongly agree (7), values higher than 4 indicates a high degree of subjective stress, burnout and social support. All values presented are an average estimate of the respectively participants answers.

As seen in Figure 5.1 the '' Fishery, Forestry, Agriculture'' industry had the highest degree of subjective stress (7,000) and burnout (4,143), while it scored among the lowest on social support (4,167). It is important to note that because of low respondents in this sector this answer may not be representative for the whole industry. On the other hand, the industry of '' Non-Governmental Sector (NGO) / Non-Profit'' had the highest degree of social support (6,667) and had the lowest value on burnout (2,143), further, it also had among the lowest values on subjective stress (2,333). Looking at the different industries and their values, one can see a clear tendency that industries with a high social support has a low degree of both stress and burnout. One can also see a coherence between stress and burnout in the form that thus higher the stress level thus higher the burnout level seems to be. Even though this correlation may not be as strong as expected by the literature review.

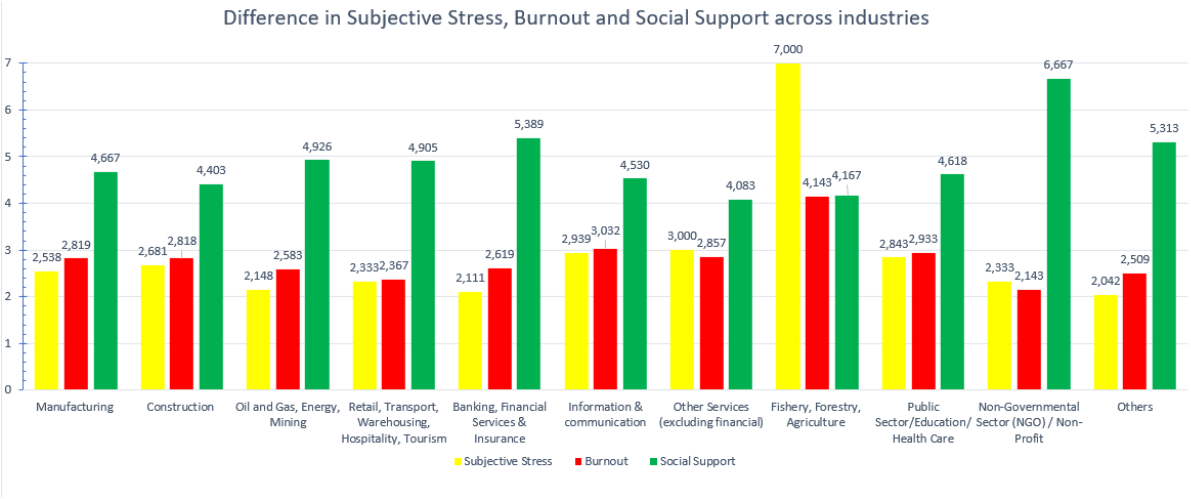

Figure 7 (5.1): *The difference in Subjective Stress, Burnout and Social Support across industries.*

The subjective stress measured in gender was surprisingly low, with an average of 2,608, which is way below the threshold of 4. Looking at the male respondents, they reported a stress level of 2,549, which is slightly below the average, while females reported stress levels of 2,667, slightly above the average. Even though the differences are small, we can still note that females reported feeling more subjective stress than males.

Nevertheless, all values are below the threshold of 4, which indicates both females and males as having relatively low stress levels in project work. This result is also reflected trough burnout, as males (2,755) showed lower values than females (2,796). These differences may be small, nevertheless it still compliments the previous research presented in the literature review.

Interesting founds were made when splitting the burnout questions into the three burnout dimensions of emotional exhaustion, cynicism and professional efficacy. Our findings somewhat supported the literature claiming emotional exhaustion targeting females more frequently than males, and the opposite with cynicism. We found that emotional exhaustion on males (2,738) were lower than on females (2,917), as displayed in Figure 5.2. Additionally, the male cynicism (2,981) was higher than the female (2,778), just as suggested in the literature review. The latter dimension, professional efficacy, had a slightly lower male (2,655) value than female (2,704), thus indicating according to our survey, females were more exposed to burnout than men in the form of professional efficacy.

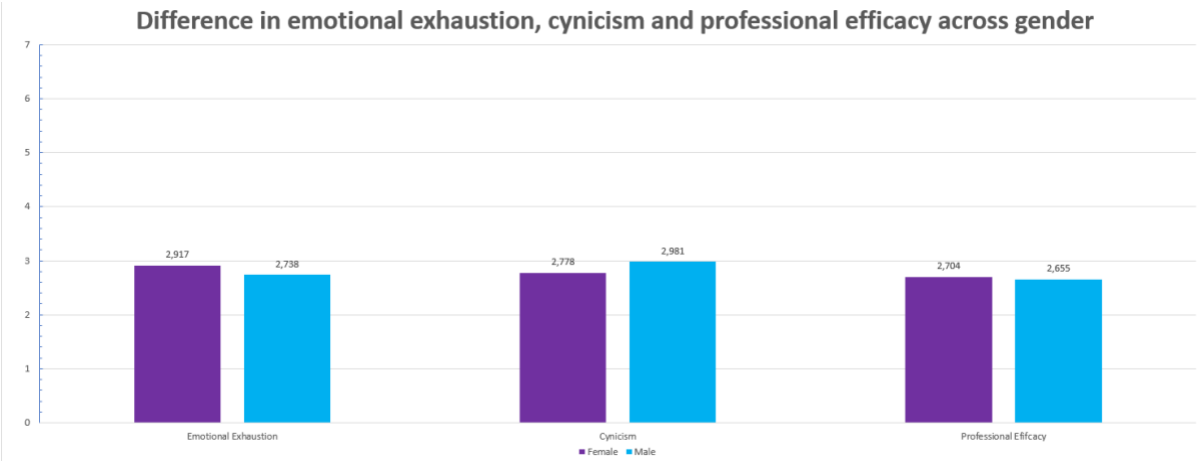

Figure 8 (5.2) *The difference in emotional exhaustion, cynicism and professional efficacy across gender.*

Some other interesting findings were that respondents seemed to be more and more exposed to burnout the younger they were, as the respondents and their respectively values were; age ≤ 29 (3,095), age 30-39 (3,032), age 40-49 (2,852), and age ≥ 50 (2,577). Moreover, the respondents in the age group ≥ 50 reported they experienced the least amount of subjective stress (2,418), they also had the highest degree of social support (4,866).

Furthermore, more interesting findings were made, concerning the project members role in a project and their exposure to stress, burnout and social support. This includes that it seemed like project members (2,653) were more stressed than PMs (2,594), ‘’others’’ (2,200) felt even less stressed. On the other side, PMs (2,798) seemed to be more exposed to burnout than project members (2,759) and ‘’others’’ (2,452), as supported in the literature review. At last, social support among PMs (4,786) were higher than with both project members (4,444) and ‘’others’’ (4,700).

The difference in subjective stress, burnout and social support across years of experience with project-based work is displayed in Figure 5.3 indicating that respondents with 30-40 years of experience had the least degree of burnout (1,901) and second least degree of subjective stress (1,667). While those that had between 31-35 years of experience seemed to report the highest degree of social support (5,639).

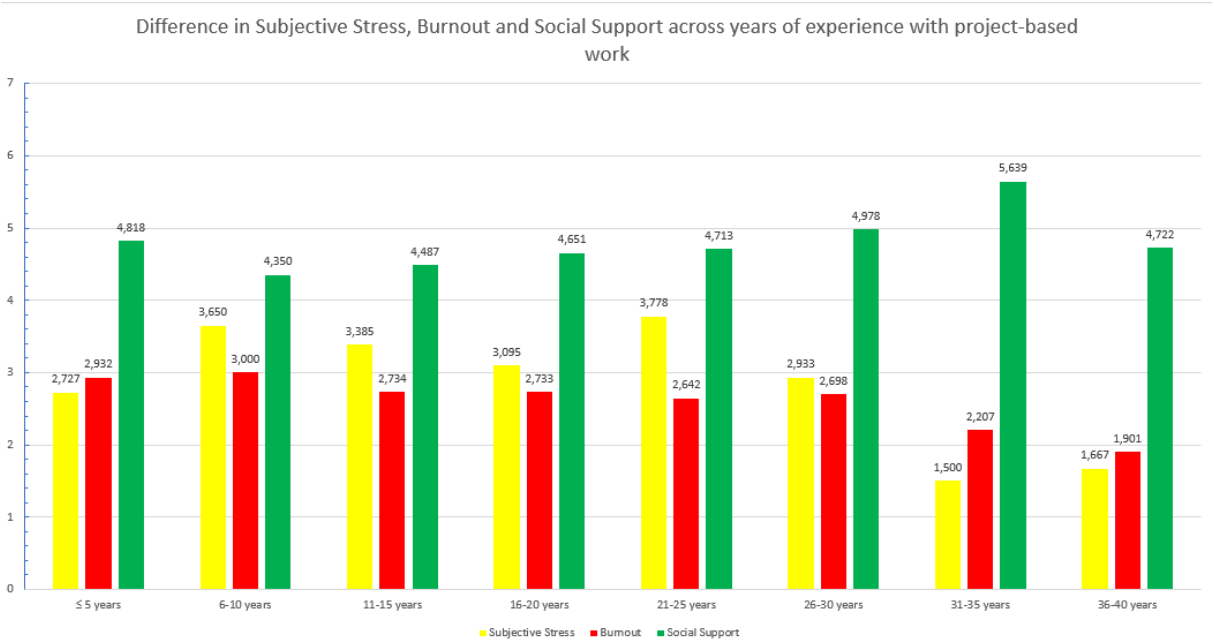

Figure 9 (5.3): *The difference in subjective stress, burnout and social support across years of experience with project-based work.*

The relationship between subjective stress, burnout and social support across the working hours in project-based work per week is displayed in Figure 5.4. One can see that there was a generally high degree of social support in all the groups, though it seemed like it was less social support in the group with the least amount of project-based work per week (≤ 9 hours), this was also the group with the highest amount of burnout (3,190). While all the other groups were relative similar in values.

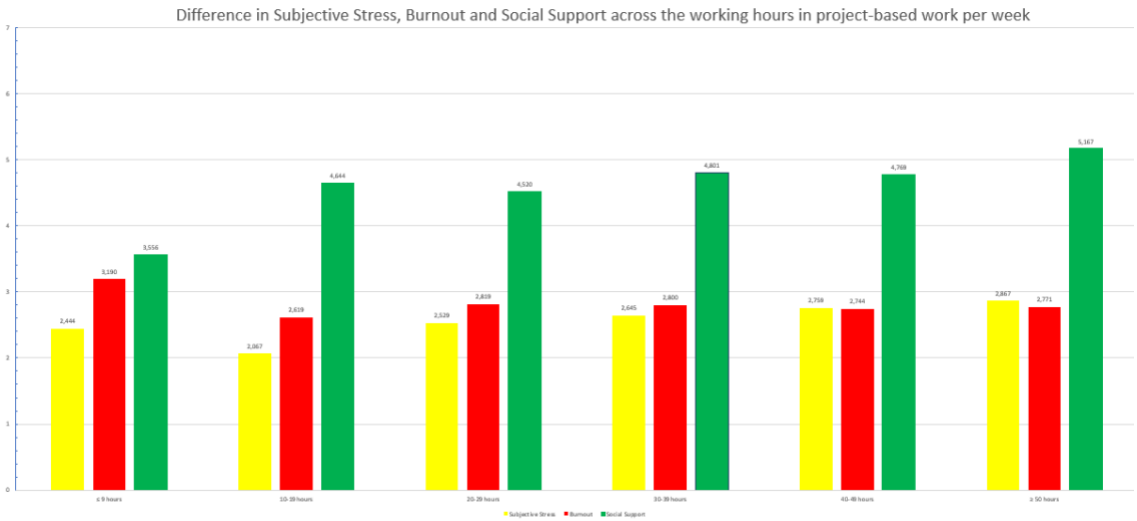

Figure 10 (5.4): *The difference in subjective stress, burnout and social support across the working hours in project-based work per week.*

Additionally, looking at the difference in subjective stress, burnout and social support levels among Norway and the rest of the Nordic countries we saw that Norwegians were in general less stressed (2,515) than other Nordic project workers (2,778). Looking at burnout levels, Norwegians and other Nordic workers were approximately equally burnout with levels of respectively 2,583 and 2,587, both levels are low. Lastly, social support among the whole Nordics seemed to be in the high to moderate level, with Norwegian workers having values of 4,636 and workers in the rest of the Nordics having values of 4,883.

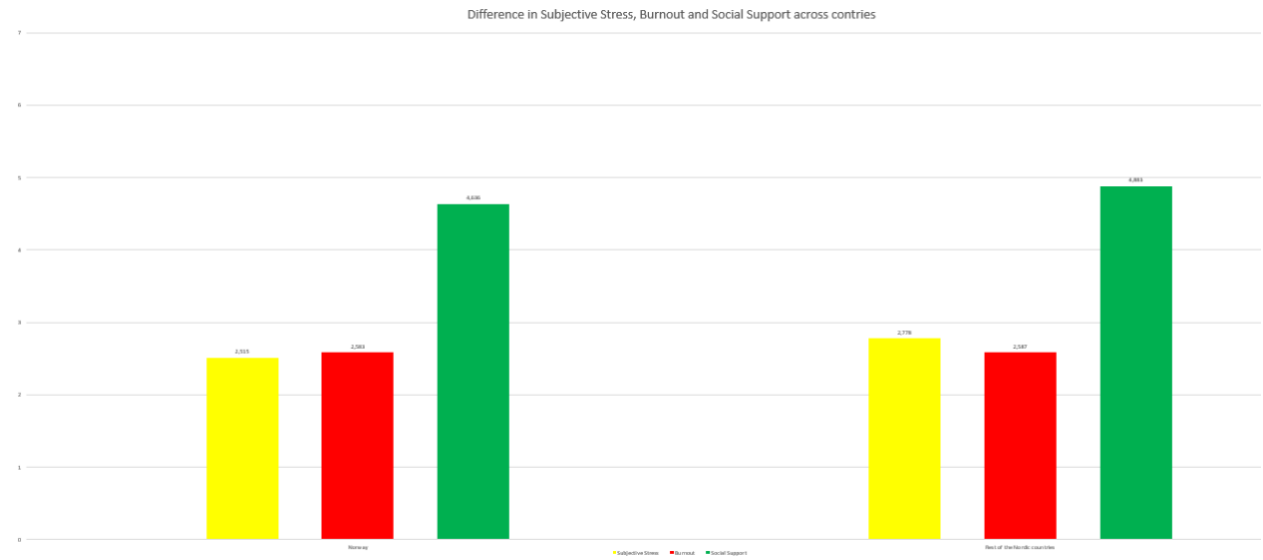

Figure 11 (5.5): *The relationship between Subjective Stress, Burnout and Social Support across countries.*

5.3 Relationship between control variables and the dependent variable

This section considers the relationship between some of the most relevant control variables and the workers individual performance. As individual performance was measured on a seven-point scale ranging from strongly disagree (1) to strongly agree (7), values higher than 4 indicates high degree of individual performance while values below 4 lower degree of individual performance.

As seen in Figure 5.6 employees' individual performance differs between industries. Employees working with projects in the '' Non-Governmental Sector (NGO) / Non-Profit'' (6,556),''Others'' (6,278) and in the ''Banking, Financial Services & Insurance'' (6,074) industries indicated a high degree of individual performance. While those working in ''Manufacturing'' (5,137) and '' Information & communication'' (5,384) industries reported having a lower degree of individual performance.

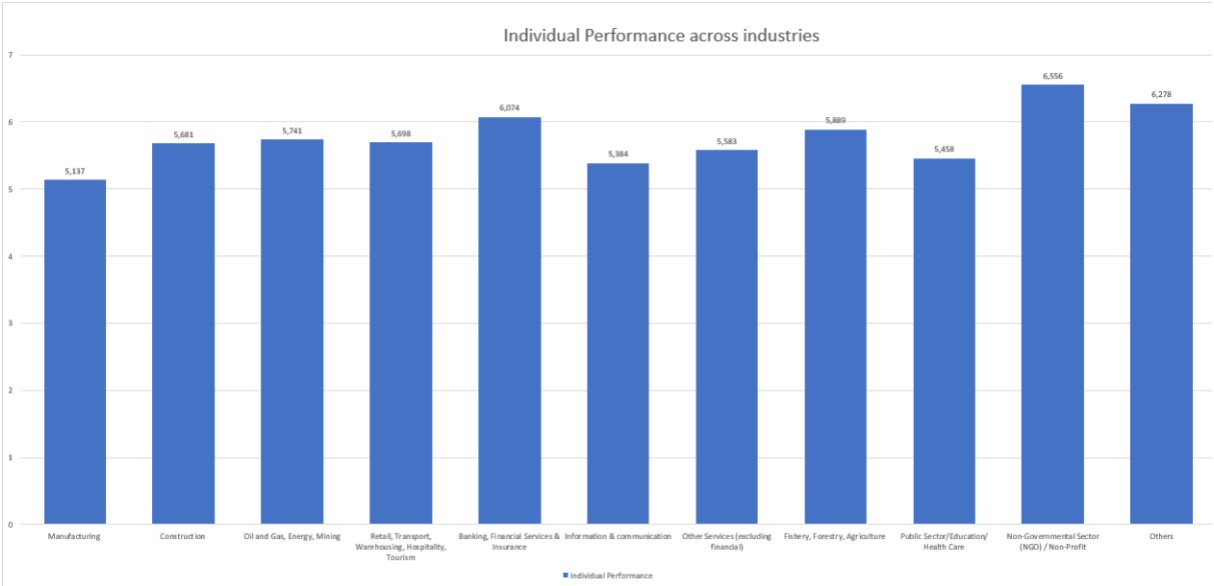

Figure 12 (5.6): *The individual performance across industries.*

slightly higher degree of individual performance than males (5,552). When examining how individual performance differed across age, the ones ≥ 50 years (5,778) seemed to have the highest degree of individual performance, followed by the ones ≤ 29 years (5,741). Those from 30-39 years (5,533) and 40-49 years (5,393) reported the lowest degree of individual performance.

The role the respondents had in their projects, namely project manager/project leader, project-team member or other, also seemed to influence their individual performance, as project-team members had the lowest degree of individual performance (5,157), followed by the PMs (5,735). Other (6,089) had a higher value than the latter two.

Further, in regards of years of project-based work experience and its influence on individual performance, one could see in Figure 5.7 a tendency that those that had more than 25 years of experience with project work had a higher degree of individual performance, compared to those under the age of 26.

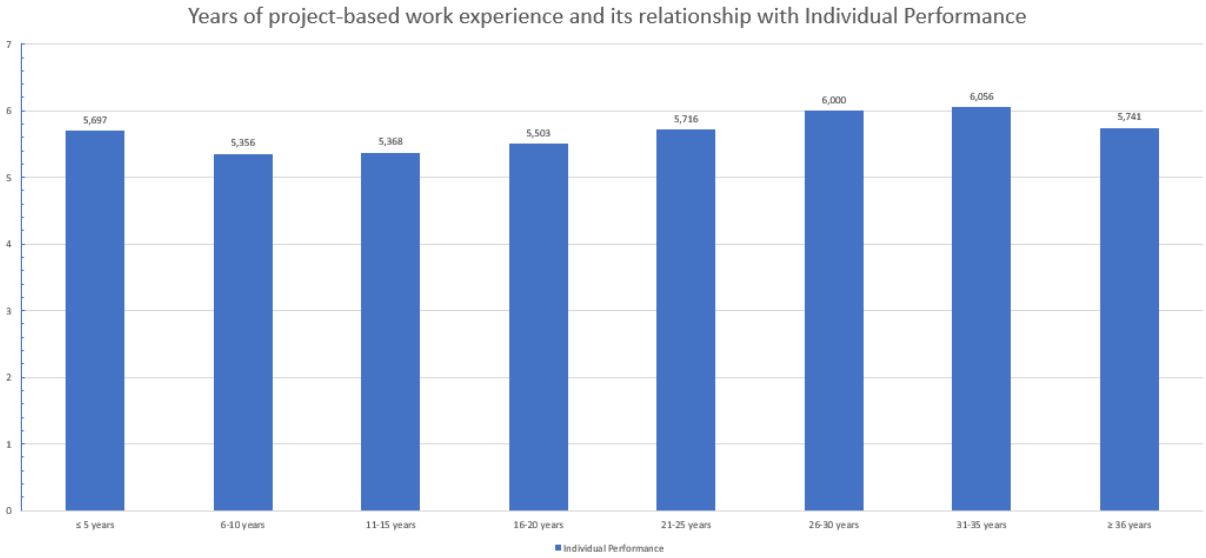

Figure 13 (5.7): *The years of project-based work experience and its relationship with individual performance.*

Furthermore, in the manner of what type of project they were working on, whether it was on internal (5,345), external (5,778) or both (5,686), one could see that the ones who worked on external versus internal or both internal and external, reported a higher degree of individual performance.

Looking at Figure 5.8 one can see that the relationship between working hours in project-based work and its relationship with individual performance showed a tendency for the ones with more working hours to have a higher individual performance. The ones aged 50 or higher reported they had an individual performance of (6,156), which is considerably higher than those with only 9 hours or less (4,407).

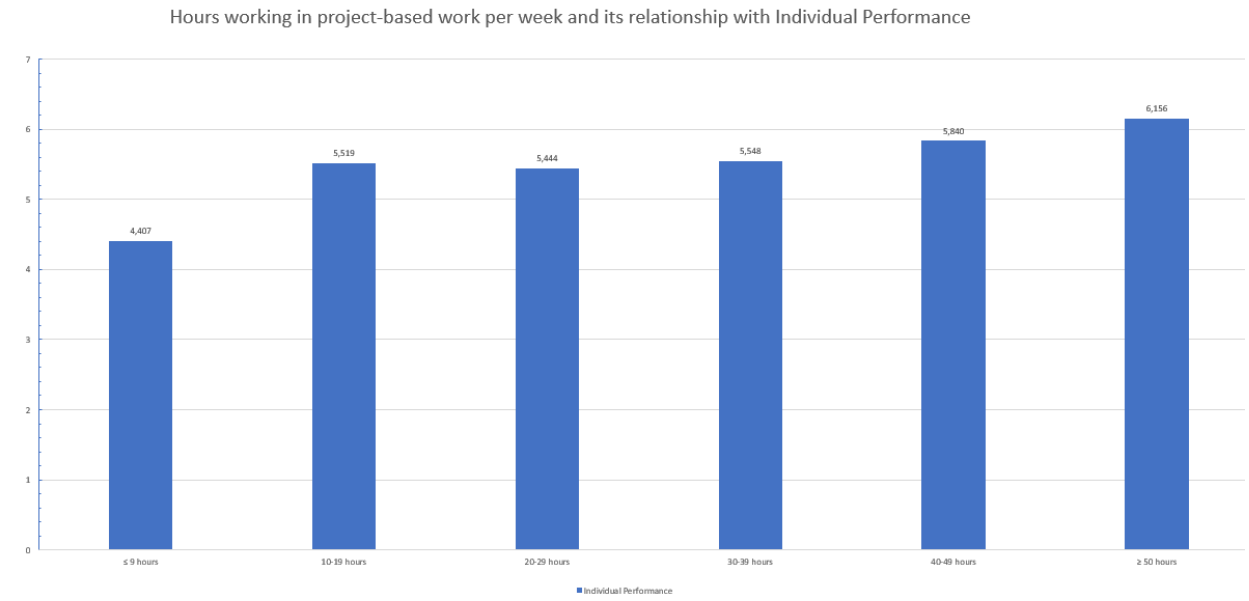

Figure 14 (5.8): *Hours working in project-based work per week and its relationship with individual performance.*

When looking at the individual performance in Norway and the rest of the Nordic countries, we found that Norwegian project members are generally having a lower individual performance (5,538) than in the rest of the Nordics (5,837), displayed in figure 5.9. Tough, the individual performance in all the Nordic countries was generally high. Even though there were some differences in individual performance, the differences were not very big.

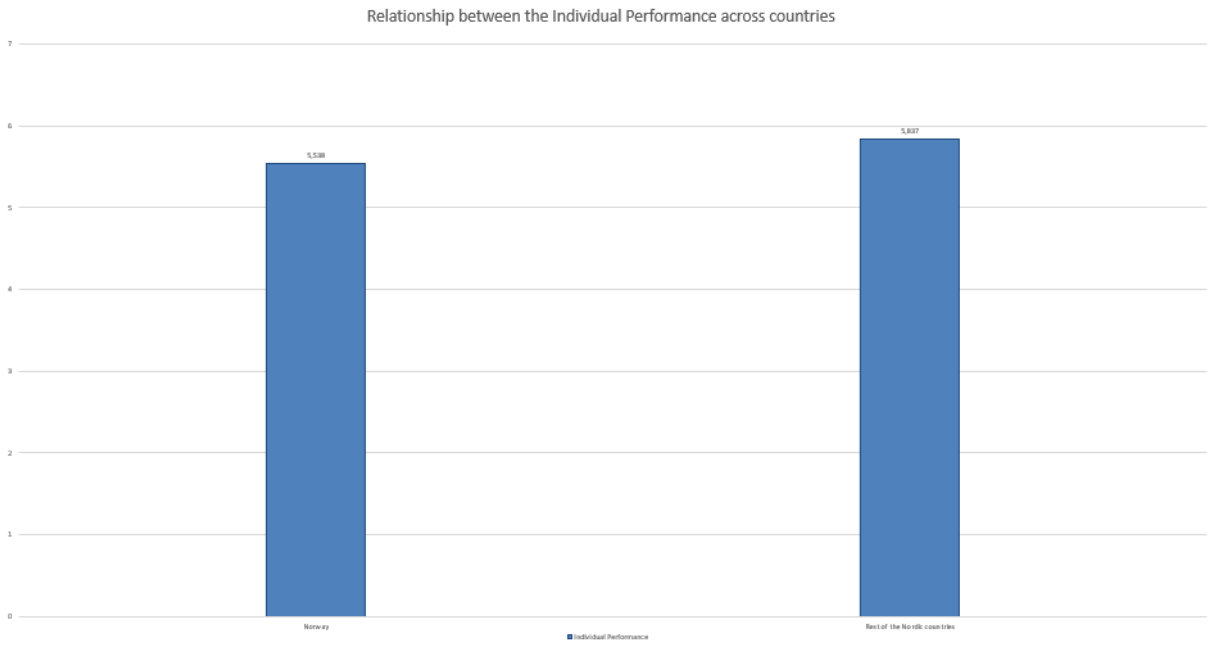

Figure 15 (5.9): *The comparison of individual performance in Norway and the rest of the Nordic countries.*

5.4 Testing of the hypothesized model

In this study, we wanted to look at the effect of subjective stress, burnout and social support on individual performance amongst project workers. In this part, we will look at the relationship between the variables. We begin by looking at the direct effects, before we look at the indirect effects.

To test the direct effects, we had to look at the independent variables. We also included the mediating variable. To test the hypothesized model, we started by investigating the relationships between the constructs in the structural model, i.e. the path coefficients. The path coefficients values usually range from -1 to 1, whereas values close to -1 or 1 indicates a strong relationship and values close to 0 indicates that the values are not significantly different from zero (Hair et al., 2017, p. 195).

The path coefficient between subjective stress and individual performance (-0.421) indicated a negative relationship with a moderate strength, indicating a moderate negative relationship between the variables. Next step was to look at the amount of variance in the dependent variable, by looking at the R^2 value received from our model. The values ranged from 0 to 1, where higher value indicates higher predictability. Which values that are considered acceptable varies, depending on the discipline. In marketing research, R^2 values of 0.75, 0.50 or 0.25 indicates respectively substantial, moderate or weak predictability (Hair et al., 2017, p. 199). The R^2 value of our dependent variable (0.177) is very close to 0, which can be interpreted as weak predictability.

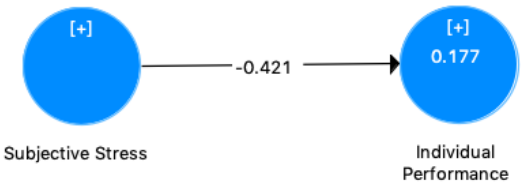

Figure 16 (5.10): *Relationship between subjective stress and individual performance.*

While taking a closer look at the relationship between subjective stress and individual performance, we noticed that it didn't reflect the theory of the inverted-U-model previously discussed in our literature review. As one can see from Figure 5.11., individual performance seemed to be at a high level already at the lowest level of subjective stress (1), and participants kept reporting such high levels of individual performance to moderate levels of subjective stress (4). The individual performance takes a dive when the participants experienced moderate to high degree of subjective stress. Nevertheless, the most interesting finding seen is that the highest individual performance is reported when the participants felt they were the most stressed (7), which is not in line with the inverted-U theory.

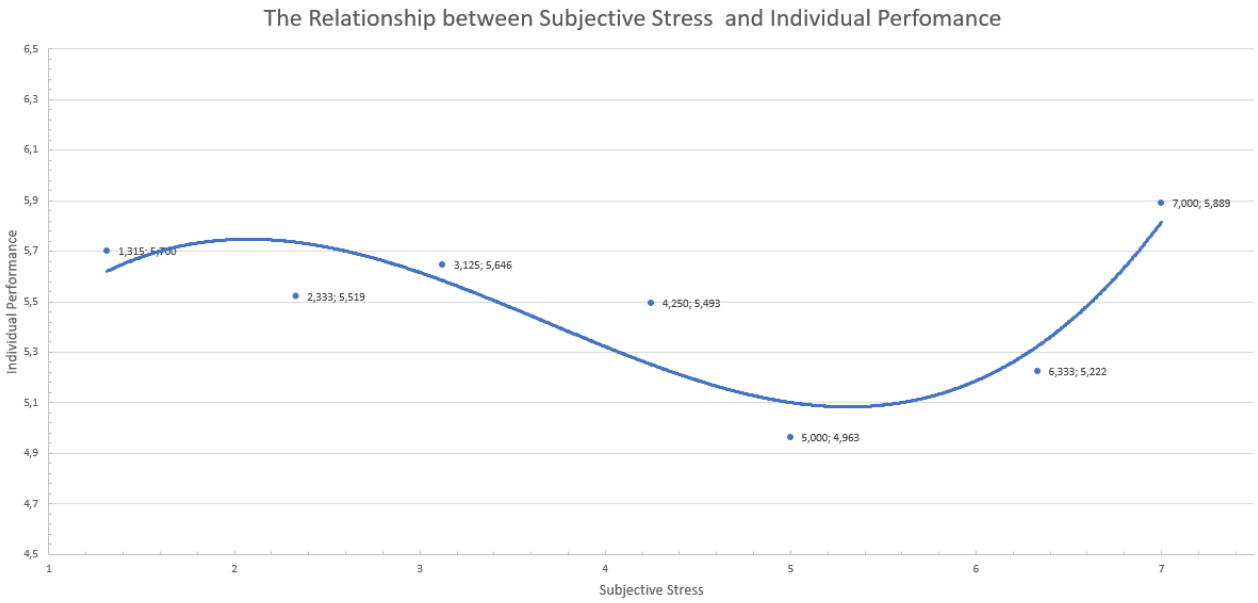

Figure 17 (5.11): *Graphic display of the relationship between subjective stress and individual performance.*

The social support variable has a role of both moderating variable and independent variable. So, we looked at the relationship between social support and individual performance and found that the path coefficient between social support and individual performance (0.532) showed a positive relationship with a moderate strength, indicating a moderate positive relationship between the variables. The R^2 value of our dependent variable (0.283) is just above 0.25, which can be interpreted as weak to moderate predictability.

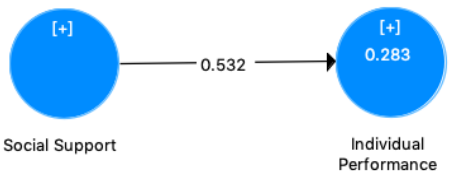

Figure 18 (5.12): *Relationship between social support and individual performance.*

It would further be interesting to look at how the independent variables subjective stress and social support affected burnout directly. We found that there was a strong positive relationship between subjective stress and burnout (0.776). The R^2 value of burnout (0.603) indicated moderate to strong predictability.

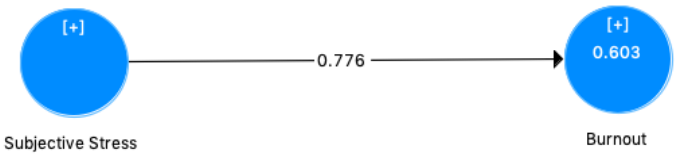

Figure 19 (5.13): *Relationship between subjective stress and burnout.*

There was a moderate negative relationship between Social Support and Burnout (-0.523). The R^2 value of Burnout (0.274) indicated a possibility for weak predictability.

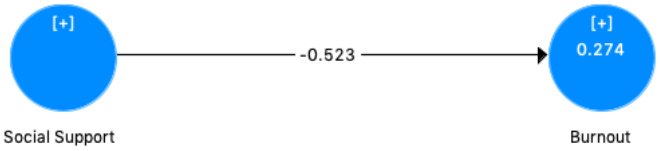

Figure 20 (5.14): *Relationship between social support and burnout.*

Looking at the joint effects of the different variables, we saw that subjective stress still seemed to have a negative effect on individual performance (-0.145), although significantly weaker. Social support still had a positive moderate effect, although slightly weaker (0.464). The R^2 value of individual performance was now slightly higher (0.301), indicating a slight increase in predictability, although still remaining between weak to moderate. Social support appeared to have the strongest relationship, and thus might have the strongest effect on individual performance.

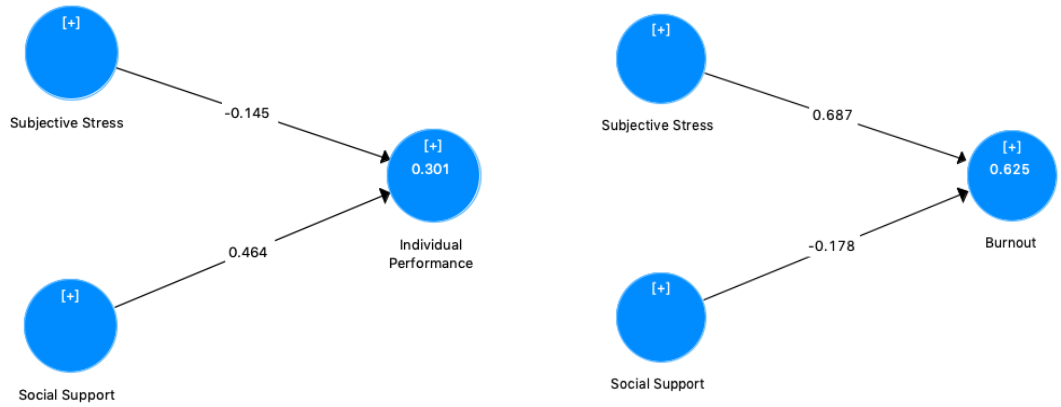

Figure 21 (5.15): *Path models without mediating and moderating effects.*

Subjective stress would still have a strong positive relationship to burnout (0.687), although slightly decreased and could be categorized as a moderate to strong relationship. The relationship between social support and burnout remained negative, but significantly weaker (-0.178). The R^2 value of burnout was now 0.625, indicating an increase in predictability. For burnout, subjective stress seemed to have the strongest relationship, and thus the greatest effect.

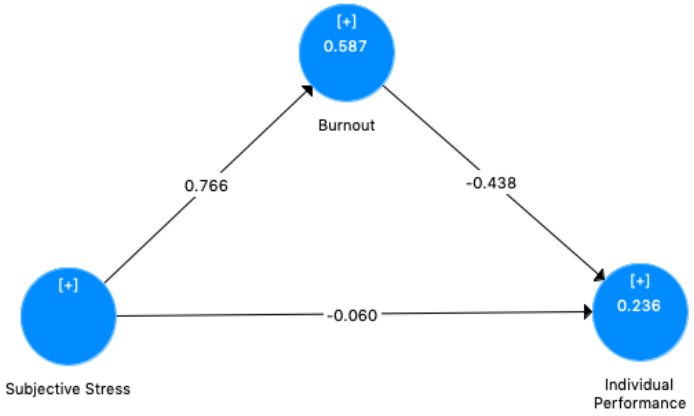

Figure 22 (5.16): *Path models with mediating effect.*

We also looked at the path model which included the mediating effect in Figure 5.16 we see that subjective stress still had a slightly negative effect (-0.060) on the individual performance, although very small. The effect to burnout remained almost the same (0.766). We do see that from burnout to individual performance, the effect was significantly negative (-0.438), suggesting a negative mediating effect when compared to the relationship between subjective stress and individual performance. The R^2 value of burnout suggested moderate reliability (0.587), while the R^2 value of individual performance had decreased slightly (0.236).

Subjective stress still had a strong positive relationship to burnout (0.687), although slightly decreased and could be categorized as a moderate to strong relationship. The relationship between social support and burnout remained negative, but significantly weaker (-0.178). The R^2 value of burnout was now 0.625, indicating an increase in predictability. For burnout, subjective stress seemed to have the strongest relationship.

In addition to evaluate the R^2 value, we assessed the f^2 effect size, the Q^2 value and the q^2 effect size. The f^2 effect size is measured as the change in the R^2 values when one specific independent variable is removed from the model. When assessing f^2 effect size one can use the following guidelines, the values 0.02, 0.15 and 0.35 indicates a small, medium or large effect of the independent variable. Effect size that is less than 0.02 indicates that there is no effect (Hair et al., 2017, pp. 201-202).

In our model, social support seemed to have a just over medium f^2 effect on individual performance, but a lower to medium effect on burnout. Burnout itself had a low to medium effect on individual performance. Subjective stress seemed to have no effect on individual performance, while it had a very great effect on burnout, as shown in the Table 5.4.

	Burnout	Individual Performance
Burnout	-	0.050
Social Support	0.061	0.177
Subjective Stress	0.894	0.002

Table 10 (5.4): *The f2 effect sizes.*

It was important to not only consider the R^2 when assessing the predictive accuracy of the structural model, but also the Stone-Geisser's Q^2 value. The Q^2 value is assessed by using blindfolding procedure and indicates the structural models out-of-sample predictive power by comparing the original values with the predicted values.

Q^2 values above 0 suggests that the model has a predictive relevance for the dependent variable (Hair et al., 2017, pp. 202-207). In our case the Q^2 was 0.108 for individual performance, and 0.215 for burnout. As these values were above 0, we could conclude that our model had predictive relevance.

As well as evaluating the Q^2, one should also assess the q^2 effect size. In cases where the research model is divided into minor models with only one independent variable, this is not necessary. In our case, with a mediating variable, we should asses the effect (Hair et al., 2017, pp. 207-208). The q^2 effect size was computed manually from the Q^2 effect size, as SmartPLS did not provide this. We started by computing the Q^2 value (0.108), which we did above. We then excluded the mediating variable of burnout from the model and computed the Q^2 value again (0.098). Then we used the following formula to compute the q^2 effect size (Hair et al., 2017, p. 220):

$$q^2 = \frac{Q^2_{included} - Q^2_{excluded}}{1 - Q^2_{included}} = \frac{0.108 - 0.098}{1 - 0.108} = 0.011$$

Using the rule of thumb of effect size from f^2, the q^2 effect size was low. This would indicate that the mediating variable had a very small predictive relevance for the independent variable (Hair et al., 2017, p. 209)

The next step was to determine the significance of the relationships. When evaluating the results of the path model one also needed to test the significance of all the relationships in the structural model using t-values, p-values and the bootstrapping confidence intervals (Hair et al., 2017, p. 197). In order to test the significance of the hypothesized relationship in our model, we did a Bootstrapping procedure in SmartPLS. Doing the Bootstrapping procedure, the one-tailed test was used as all of our hypotheses clearly indicates a directional relationship.

	5.0%	95.0%	T Statistics	P Values	Significance
Social Support -> Burnout	(0.288)	(0.046)	2.407	0.008	Yes
Subjective Stress -> Burnout	0.580	0.775	11.102	0.000	Yes
Social Support -> Individual Performance	0.317	0.588	5.584	0.000	Yes
Subjective Stress -> Individual Performance	(0.267)	0.141	1.378	0.084	No

* All values in green are significant values
** All values in red are unsignificant values

Table 11 (5.5): *The significant analysis of the direct effects.*

Further, we used a significance level of 5%, meaning that the t-values should be above 1.658 (Sekaran & Bougie, 2013, p. 384). H_0 was rejected when the value was higher than 1.658. A significance level of 5% means that we have a 5% chance of rejecting H_0 when it actually is supported, i.e. doing a Type I error. One can also have a case of Type II error, meaning that the H_0 is accepted when it should have been rejected. In addition to report the significance, we also included the bootstrap confidence intervals in Table 5.4, as these intervals tells us something about the stability of the coefficient estimate (Hair et al., 2017, pp. 155-158).

According to Table 5.5, both relationships to burnout were significant, while only social support was significant to individual performance. Subjective stress appeared not to be significant to individual performance.

As noted earlier, burnout acts as a mediating variable for the relationship between subjective stress and individual performance and will also act as a mediating variable for the relationship between social support and individual performance in SmartPLS. The values mentioned previously are without moderating and mediating effects. Next, we looked at the effects of the mediating variable.

After running the SmartPLS algorithm on our research model, we looked at the effects of the medating variable. We looked if there were any signifant effect, and if so, how great of an effect. From Table 5.6 below, we can see that burnout had a very minor positive indirect effect (0.052) on the relationship between social support and individual performance. This seems rather illogical, as burnout should logically create a negative indirect effect. It is important then to look at significance.

Construct	Burnout	Individual Performance	Social Support	Subjective Stress
Burnout				
Individual Performance				
Social Support		0.052		
Subjective Stress		(0.198)		

* All values in ( ) are negative values

Table 12 (5.6): *Effects of mediating variable.*

In Table 5.7, we see that there is no significant indirect effect, as the P value indicates (0.173). burnout did therefore not have a significant indirect effect on the relationship between social support and individual performance, as somewhat expected. We found no specific research that would suggest otherwise, but do to the model we created in SmartPLS, the values would show up nevertheless.

Mediating relationship	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values
Social Support -> Burnout -> Individual Performance	0.052	0.058	0.038	1.363	0.173
Subjective Stress -> Burnout -> Individual Performance	(0.198)	(0.206)	0.100	1.974	0.048

* All values in green are significant values
** All values in red are unsignificant values

Table 13 (5.7): *Significance of mediating relationship.*

Further, we looked at the indirect effect of Burnout on the relationship between subjective stress and individual performance. From Table 5.7, we found that there was a decent negative indirect effect (- 0.198) from burnout. By looking at the Table 5.7, we can see that the indirect effect was significant (0.048) at 5%. We can therefore conclude that the burnout variable had a negative mediating effect on the relationship between subjective stress and burnout.

After checking for mediating effects, next step was to look at the potential moderating effects in the model. In Figure 5.17, We then looked at the completed direct and indirect model, as shown in Figure 5.17. The moderating effects of social support are included in this figure.

The interaction effects of the independent variable (project demand) and the different moderating variables were assessed using the orthogonalizing method. Usually one should not assess the main effect of an independent and dependent variable when the moderators are included in the analysis, however as we used the orthogonalizing approach this would not be a problem (Hair et al., 2017, p. 258).

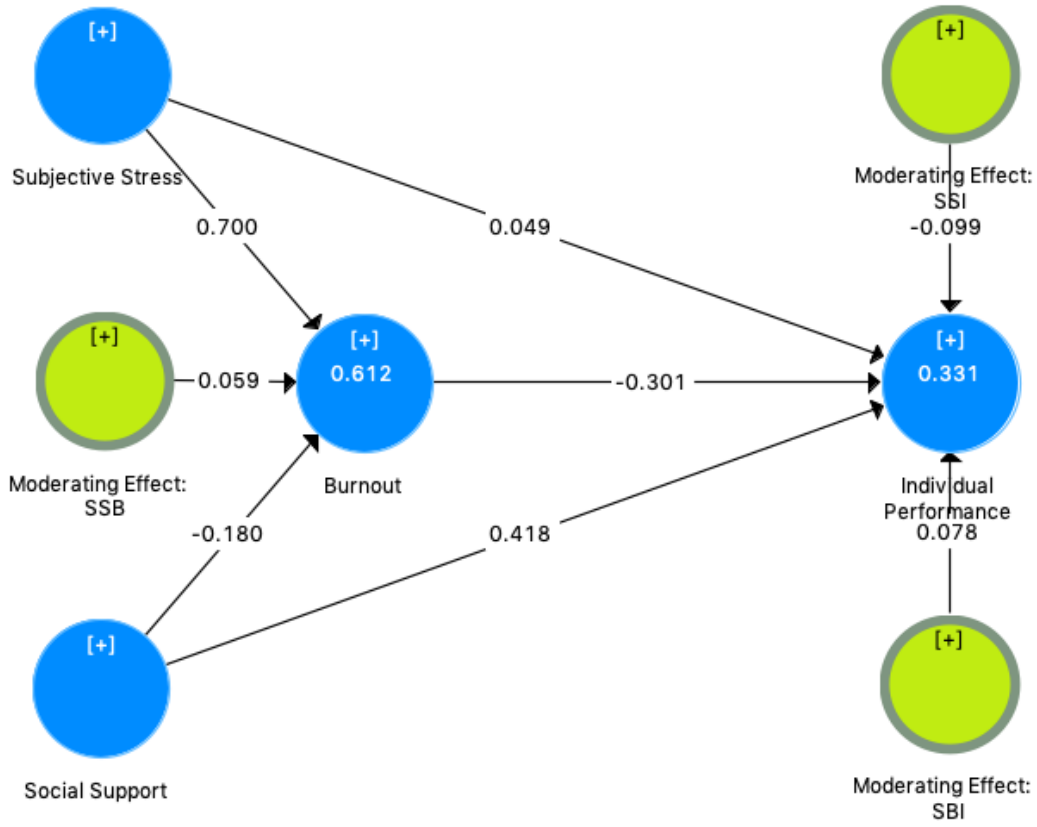

Figure 23 (5.17): *Path model including mediating and moderating effects.*

Nevertheless, since we were interested in the effects of the independent variables alone as well as the effect including the moderators, we decided to do the analysis both with and without the moderating variables. As the analysis in the previous section considered the direct effects only, this section will include both the direct and indirect effect.

From Figure 5.17, we looked at the path coefficients. This way, we could test if we could reject or accept our hypotheses. Since the orthogonalizing approach is used, we could analyze both the direct and indirect effect.

The path coefficient between subjective stress and individual performance (0.049) was now actually slightly positive, rather than negative as previously analyzed. However, the relationship was very weak. The relationship between subjective stress and burnout (0.700) were very positive and strong.

The relationship between social support and burnout (-0.180) remained negative, although the value indicated a weak relationship. For social support to individual performance (0.418), the relationship was very similar to previous analysis as positive and moderate. The effect between burnout and individual performance (-0.301) was not previously analyzed for direct effect, as burnout is a mediating variable, but we can see that the relationship indicated a negative moderate to weak relationship. The primary interest when doing a moderation analysis is the significance of the interaction term, i.e. path coefficients (Hair et al., 2017, p. 256).

The moderating relationship between social support and the mediating and dependent variables indicated weak effects. The moderating effect on the relationship between subjective stress and burnout (0.059) was positive, but rather weak. The same can be said about the moderating effect on the relationship between burnout and individual performance (0.078). Between subjective stress and individual performance (-0.099), social support seemed to have a negative moderating effect, although again rather weak. Summed up, this indicates that the moderating relationships were weak, and appear to have very little effect.

We also compared the path coefficients of the independent and mediating variables (Hair et al., 2017, p. 195). From Figure 5.17, social support appeared to have the greatest effect on individual performance. Burnout also had a significant effect, while subjective stress seemed to have very little effect. From the model, we can further look at the R^2 value. Burnout (0.612) holds a R^2 value that indicated moderate to high predictability, while individual performance (0.331) indicated moderate to low predictability.

These values are very similar to previous analysis. Burnout is slightly lower, while individual performance is slightly higher. It seemed that less of the variance in burnout was explained when including the moderating effects, but more of the variance in individual performance.

The f^2 values should also be assessed again. The rule of thumb is that 0.005, 0.01 and 0.025 indicates respectively minor, medium and great effect on the independent variable (Hair et al., 2017, p. 256). The effect sizes for burnout were moderate for social support (0.063) and large for subjective stress (0.867), while the effect sizes of individual performance were moderate for burnout (0.051), great for social support (0.183) and minor for subjective stress (0.001). These values are displayed in Table 5.8 below.

Construct	Burnout	Individual Performance
Burnout		0.051
Social Support	0.063	0.183
Subjective Stress	0.867	0.001

* All values in green are great values

** All values in black are moderate values

*** All values in red are minor values

Table 14 (5.8): *The updated f2 effect sizes.*

After running a blindfolding procedure in SmartPLS, we cold assess the Q^2 values. As noted previously, these values should be higher than 0 to indicate predictive relevance for the dependent variable (Hair et al., 2017, pp. 202-207). In our case, Q^2 was 0.214 for burnout and 0.108 for individual performance. Our model has a predictive relevance for our dependent and mediating variable. The updated q^2 value was exactly the same, when including a potential moderating effect of social support.

We also ran a one-tailed bootstrapping to test if there existed a direct and indirect effect between the variables. A two-tailed test will test the Confidence Interval for 97,5 %, while a one-tailed test will test the same for 95 %, which is sufficient based on our sample size. For a relationship to be significant, it has to have a P Value of below 0.05, and a T Statistics of above 1.66. From the Table 5.9, we see that none of the moderating variables were significant. We also see that the relationship between subjective stress and individual performance were also not significant, as concluded earlier. All the other relationships were significant.

	5.0%	95.0%	T Statistics	P Values	Significance
Moderating Effect SSB -> Burnout	(0.053)	0.168	0.886	0.188	No
Moderating Effect SBI -> Individual Performance	(0.128)	0.297	0.600	0.274	No
Moderating Effect SSI -> Individual Performance	(0.319)	0.132	0.729	0.233	No
Social Support -> Burnout	(0.299)	(0.043)	2.170	0.015	Yes
Social Support -> Individual Performance	0.257	0.572	4.421	0.000	Yes
Subjective Stress -> Burnout	0.564	0.817	6.218	0.000	Yes
Subjective Stress -> Individual Performance	(0.196)	0.319	0.314	0.377	No
Burnout -> Individual Performance	(0.541)	(0.035)	1.928	0.027	Yes

Table 15 (5.9): *Significance of relationships.*

After testing the moderating effects, and finding that these were not significant, it was not necessary to do a Slope Analysis. Running a Slope Analysis will give more details about the moderating effects, given that the moderating variables are significant. (Hair et al., 20 17, p. 258), this was not necessary for us.

After analyzing our variables in PLS, we knew what we needed to know in order to either support or reject the hypotheses. The analysis includes all of our dependent, independent, mediating and moderating variables. A complete summary of the hypotheses and respective results is listed in Table 5.10.

Hypotheses	Result
H1: *Subjective stress in project work is negatively related to project participants individual performance.*	Rejected
H2: *There is a positive relationship between subjective stress and burnout.*	Supported
H3: *Burnout in project work has a negative mediating effect on the relationship between subjective stress and individual performance.*	Supported
H4 a: *Social support has a negative moderating effect on the relationship between subjective stress and burnout.*	Rejected

H4 b: *Social support has a positive moderating effect on the relationship between subjective stress and project participants individual performance.*	Rejected
H4 c: *Social support has a positive moderating effect on the relationship between burnout and project participants individual performance.*	Rejected
H5 a: *Social support have a negative direct effect on burnout.*	Supported
H5 b: *Social support have a positive direct effect on individual performance.*	Supported

Table 16 (5.10): *Overview of hypotheses and results.*

6. Discussions

The purpose of this study was to contribute to the knowledge about employees' subjective stress and burnout levels in project-based work and how that affected their individual performance. We did so by assessing the impact of a set of variables derived from the project work literature. As project-based work is becoming more and more common, the number of employees working in projects has- and will continue to increase, as well as the research topic. It has for a long time been conducted research on all the positive sides and benefits concerning project work, it isn't until recent times researchers have started to investigate the negative sides. The research on the negative sides has been increasingly popular over time. We used an adopted version of both the inverted U-line model and the MBI-GS (General Survey) as the starting point of our study and examined the impact of stress and burnout on employee's individual performance in project-based work.

This study makes three major contributions to research. First, we add to previous findings by using both the MBI-GS and the inverted U-line model in the context of project-based work in general, and not limited to specific function areas, case or industries. Minor modifications were made to the original scales used for this study, to ensure they would be better fitted for a project work environment.

Second, previous research done on individual performance are seldom done in a project-based work environment, especially not with the combination of subjective stress and burnout, and its relationship with individual performance. Third, we had a closer look at the different variables and analysed how they impacted employees' individual performance.

Chapter 3 provided overview and insight into the existing literature, this chapter will discuss the relation between the previous research and the results in this study.

6.1 Discussion of descriptive results

As the focus in this study was to explore the impact of project work exposure on employees' individual performance, only the control variables of gender and project role were included in the MGA analysis in PLS-SEM. However, there are still some interesting tendencies and results to be found, as both the independent and dependent variables varies across control variables.

Literature have suggested that gender had some effect on the different burnout dimensions (e.g. Pinto et al., 2014; Proost et al., 2004; Vlerick, 1996), that females had a tendency to be more exposed to the dimension of emotional exhaustion and males to cynicism, this was consistent with the results in this study; were we found that females were slightly more exposed to burnout through the dimension of emotional exhaustion and that males were more exposed to burnout through the dimension of cynicism.

Research suggest that project role will make a different in subjective stress levels among the project members. Haynes and Love (2004) claimed that PMs were most exposed to subjective stress, this was not consistent with our findings, as we found that project-team members seemed to be more stressed than PMs, thus it's important to note that the stress levels recorded in our study were low for all the groups, which can be caused be the exceptionally good working environment, which Nordic countries are known for (Leiter & Schaufeli, 1996; Pinto et al., 2016; Gallie, 2003). Also, we measured the levels of subjective stress, while Haynes and Love measured stress in general (both objective and subjective), this could also be an explanatory factor in the difference in results.

Nevertheless, our research found that the participants with duo roles as both PMs and project-team members had the highest individual performance. This is new insight provided by our research, as we did not find any previous research discussing this.

However, in this study, PMs were more exposed to burnout than project-team members and this is consistent with the literature claiming that PMs tend to be more burnout than the other team members (Leiter & Schaufeli, 1996; Pinto et al., 2016; Gallie, 2003). Further, when looking at gender and the influence on stress, the literature were divided, some said that males were more stressed (e.g. Tung, 1980; Loosemore & Waters, 2004) than females, other said females were more stressed (e.g. Nelson et al., 1990; McDonald & Korabik, 1991; Lim & Teo, 1996), while some claimed they were equally stressed (e.g. Matocchio & O'Leary, 1989). In our study we found that females tended to be slightly more stressed than males. Looking at the individual performance, we found that females had a marginal higher individual performance than their male counterparts. Later in the discussion part we will talk about the relationship between stress and individual performance and why we think our research results are as they are.

The literature suggested that project group members with more subjective stress would also be exposed to higher levels of burnout (e.g. Senaratne & Rasagopalasingam, 2017), which is consistent with what we report in our study. Also, research done by Schoper et al. (2018) suggests that a total of 78% of the projects in Norway are internal. An external project is done for external customers, while an internal project is done for internal customers (within your own organization) (Karlsen, 2013, p. 46). This study showed that the ones working in both internal and external projects had a higher degree of individual performance than the ones working only in one of them.

Additionally, looking at the difference in subjective stress, burnout and social support levels among Norway and in the rest of the Nordics, we found no major differences. In burnout the difference was next to not existing, while the difference was a little higher in subjective stress and social support, they didn't differ much, indicating that all of the Nordic countries are in fact quite similar in regards of subjective stress, burnout and social support levels. This could be because the culture, languages and nature are very similar in all these countries (Leiter & Schaufeli, 1996; Pinto et al., 2016; Gallie, 2003), some more than others, as opposite to i.e., China and the United States of America.

We also found that the individual performance among both sectors were generally high, but that respondents from Norway reported a little lower individual performance than the respondents from the rest of the Nordic countries.

As we can see, these demographic and project work related control variables impact employees' individual performance, but they are not proven to have a high degree of predictive power. Nevertheless, one interesting tendency is that the degree of burnout is often negatively correlated to the degree of social support, i.e. those with high degree of burnout seems to have low degree of social support.

6.2 Discussion of the hypothesized model

In this study, we wanted to look at the effects of stress, burnout and support could affect performance. More specifically, we tested the effects of subjective stress and social support on the different aspects of burnout and individual performance. These relationships are bound in literature, although slightly modified for our subject about project work. This is due to the fact that there is not as much research on project work, compared to many other fields of research.

The first hypothesis is focused on the negative relationship between subjective stress and individual performance. Research did suggest that there is a certain amount of stress that actually increases productivity. This amount is more moderate, while too little or too much stress decreases productivity, which we have focused on. Yerkes and Dodson already researched this in 1908, while many others have researched this positive/negative phenomenon in the years after.

There have been some studies on how stress and performance influence project workers, i.e., Leung et al. (2011) found a strong relationship between stress and performance among construction PMs in China. Our research does somewhat contradict this, as we found that there is not a significant relationship between subjective stress and individual performance. It should be said that we focus specifically on subjective stress and not on objective stress or a combination of the two, this was done to differentiate our research from others and to contribute with new important insight on the matter, but by doing so it is not unreasonable to think that it may be the reason our result differ from previous research.

The general consensus appears to be that project participants in the Nordic countries might not be as stressed as participants from other countries, particularly outside Europe (Leiter & Schaufeli, 1996; Pinto et al., 2016; Gallie, 2003). This could also a factor influencing our results, making it differentiate from other research done in this field.

We also found that the individual performance among both sectors were generally high, but that Norway had a little lower individual performance than the rest of the Nordic countries, again the difference was quite small.

Our research suggests that low to moderate levels of subjective stress will give a high individual performance, while moderate to high levels will give lower individual performance. The most interesting finding though, is that extreme levels of subjective stress gives the highest level of individual performance. This could be explained by the mentioned factors, as well as by one of the most describing characteristics of project-based work, which is tight deadlines, since this factor is said to be the most critical one in increasing workers stress levels (Verma, 1996; Gällstedt, 2003; Lindgren & Packendorff, 2007).

In the second hypothesis, we look at the relationship between subjective stress and burnout. It is well known that higher amount of stress could lead to burnout, and we wanted to look at this in regards of project work. Although burnout was first seen as a phenomenon only appearing in the human service occupations, researchers and practitioners began to understand that burnout occurred in other professions as well (Maslach & Leiter, 2008) including in projects and in PM positions (Buick & Thomas, 2001, p. 305). We found that there is a strong relationship here, and that stress indeed is positively related to burnout, also here in the Nordic countries.

The third hypothesis is how burnout in project work could be negatively mediating to the relationship of a project participants subjective stress and individual performance. There are decent amounts of research on the effect of stress and burnout on performance, but this is more on project level or organizational level, such as in the research of Leung et al. (2011). We modified this slightly, as we wanted to look at performance on the individual level. We found that there is a negative relationship here, suggesting that burnout could indeed affect performance. Not only on higher organizational levels, such as research suggest, but also on an individual level.

Our fourth hypothesis is divided into three parts, as research suggest that social support could have several moderating effects. The moderation of support could affect all relationships in our model. However, after testing this, we found that this is not correct in our case. In our study, we wound no significant relationship for any moderation from Social Support. We did expect there to be a significant relationship, so we were somewhat surprised. But in our fifth hypothesis, we studied further the effects of social support. Our fifth hypothesis was divided into two parts, as research suggest that social support could also have a direct effect on burnout, as well as on performance. And this is correct, based on our findings. We saw that there is a much stronger effect from social support than we anticipated, indicating that strong social support could to some degree negate the negative effects of stress and burnout.

We further looked at the potential moderating effects of our control variables. We analyzed several variables in the descriptive analysis but focused on gender and project role. Amongst others, Pinto et al. (2014) suggested there could be a difference between male and female in regards of burnout. Our research also suggests this, although the differences are only slight. Maslach & Jackson (1981) looked at the different aspects of burnout and found that gender reacts differently to the different aspects. This is similar to what we found as well.

The individual's role in the project was also included as a control variable using the subgroups of project manager and project-team member during analysis. Research suggest that stress and burnout is experienced differently based on their role as either project manager or just a project member. Usually, project managers are more prone to stress and burnout (Haynes & Love, 2004; Pinto et al., 2016). We found that project members are more prone to stress, while project managers are indeed more affected by burnout.

We also observed that the levels of stress and burnout were rather low in general. There might be a more significant difference in countries and culture where the stress levels of project team members participants are generally higher.

In this study, we have shown the different effects of subjective stress, burnout and social support on individual performance. While subjective stress appears not to affect the individual performance itself, it could develop into burnout, which then affects individual performance negatively. With strong social support, the negative effects of burnout could be negated. Social support seemed to have a stronger effect on performance than burnout.

Our hypotheses about the direct effects of social support, and the mediating effects of burnout, were supported. The moderating effects of social support were rejected, together with the hypotheses of subjective stress affecting individual performance. This study contributes by combining these hypotheses and applying them to project work in industries in the highly developed Nordic countries.

7. Conclusion

This study analyzed the potential impact of subjective stress, burnout and social support on individual performance in project-based work. Our contribution adds to previous findings by using the MBI-GS and inverted-U model in context of all types of project work, not limited to specific functional areas, cases or industries. Minor modifications were made to the original scales used for this study, to ensure they would fit better for a project work environment. We further focused on subjective stress rather than objective stress, and on individual performance rather than on organizational or other types of performance.

We found that should stress develop to burnout, it could negatively affect an employee's individual performance. We further found the importance of social support, in particularly the support received from colleagues and managers. While social support had no significant moderating effect in our research model, it had a very strong direct effect on both burnout and individual performance. Based on our findings, the relationship between social support and individual performance were much stronger than the relationship between burnout and performance. This indicated that an employee could show signs of increased individual performance, even when affected by burnout, given that the employee experienced sufficient social support from the workplace.

This could also imply that individual performance itself may not be a suitable indicator for whether or not the employee is experiencing subjective stress and burnout, and other approaches would be recommended. While the relationship between subjective stress and individual performance showed no significance, our research supports and adds to the emerging literature on project work and its impact on the project employee's stress, burnout and performance.

7.1. Contributions and implications

Researchers found that when organizational members were faced with excessive amounts of burnout, the consequence would often be a desire to leave their jobs (Lee & Ashford, 1990; Weisberg, 1994). A loss of an employee could be very costly for the organization, as it forces them to identify, hire and train new replacements (Pinto et al., 2016). The incentives are therefore great for organizations to minimize the impact of workplace stress and burnout. This makes it highly relevant to increase focus on how to reduce stress and burnout levels of employees within projects to keep their individual performance at a high level and generating income for the organization. Preventing them from quitting is crucial, as it would make them an expense for the organization (Pinto et al., 2016).

Even though our research had some similarities to the inverted-U theory our findings suggested that extreme level of subjective stress correlated well with high level of individual performance, but the relationship was deemed not significant. We further found that high levels of burnout negatively influenced the individual performance, while high levels of social support could reduce the levels of burnout, as well as make people perform at a high individual level despite being affected by burnout.
The results in this study can be interpreted in order to help increase the awareness of stress and burnout and its implication on performance in a project-based work environment. Research suggest that high levels of stress and burnout is bad for performance.

Additionally, research suggests that without being treated, stress and burnout could lead to serious health problems (e.g., chronical pain, headache, mental and physical fatigue) (Sommerville & Langford, 1994; Ingegård, 1999; Demerouti et al., 2002; Lingard & Sublet, 2002; Djebarni, 1996; Atkins & Gilbert, 2003; Chioccchio et al., 2010).

In some situations, burnout could turn so painful that one can turn to addictions of alcohol, drugs, gambling or sex (Benson, 1974). Hence, it is crucial to manage stress and prevent it from escalating to higher levels over long periods of time.

Not only is it important to look at the relationships between subjective stress, burnout, social support and individual performance, it is also important to focus on how to minimize the exposure of stress and burnout and maximize the exposure of social support in order to increase and maintain individual performance.

In this study we found a clear trend that people that reported higher levels of subjective stress also reported higher levels of burnout, and that the ones with higher degree of both stress and burnout generally reported a lower social support and individual performance. We also found that the ones with low subjective stress and burnout reported that they had generally higher levels of social support as well as higher individual performance.

The result of our study can be used to identify effects of stress and burnout, so one can prevent them from progressing. Overall, our study and its results could help raise awareness and knowledge on the growing importance of employee's health concerns at work in general as well as in a project-based work, and its influence on individual performance.

7.2 Critique and limitations

In this study, there are certain limitations that should be considered. Project work and mental health are broad fields of research, both separately and combined. Our research only contributes to a minor insight within these fields. To further understand the subject of mental health and performance within project work, more research is recommended.

Although the questionnaire created and used in this included a clear definition of a project, and the respondents were asked to respond to the questionnaire with their last completed project work in mind, their responses could be affected by other variables.

The questions used to measure the different constructs focuses on specific components of items, e.g., the questions related to stress focus specifically on the participants thought aspect (Senaratne & Rasagopalasingam, 2017). The definition of a project itself used in this research could be considered somewhat conservative and limited, as it dismisses smaller assignments as projects.

This study has considered only the impact of subjective stress. Scholars have mainly used objective stress or a combination of the two as an independent variable. This is partially because most of the previous research conducted on this topic has investigated the project managers role and how they are affected, neglecting the remaining project-team members, because it is often believed that PMs are experiencing more objective stress than subjective stress in their everyday project-based work (Leung et al., 2007; 2008; 2011).

Also, when people are answering questions about their state of mind and how they are feeling about certain things, they are not evaluating all aspects of their life. They are making relative fast decisions based on their current mood. This is why questions that are more precise, and context related are easier to answer precisely (Page & Vella-Brodrick, 2009).

The MBI has received some criticism as some research have indicated that the connection between the three dimensions and different causes and consequences are different (Buunk & Schaufeli, 1993). Some researchers have thus wondered why efficacy (Personal Accomplishment/Professional Efficacy), the most segregated dimensions out of the three, should be a part of the MBI (Lee & Ashforth, 1996). Regardless, the MBI, in both its original state and newer versions, are widely recognized and often used in similar research. However, there has been directed some criticism around the formulation of some of the questions in the MBI (Kristensen, Borritz, Villadsen & Christensen, 2005), especially that the items in the dimension of exhaustion and cynicism are only formulated in a negative way, and that items in the dimension of efficacy are only formulated in a positive way. Further, the instrument has also been criticized for not being suitable for establishing clinical norms for burnout, and thus not suited for individual use or to asses individual measures and treatment. Furthermore, some say that the cost connected with the use of the instrument is too high (Richardsen & Martinussen, 2006).

Another limitation is the geographic limits of the distribution. The questionnaire was only distributed in the region of the Nordic countries. Even though the existence of stress and burnout itself can be considered universal across nationalities and cultures, people have different ways of experiencing, reacting and coping with these issues. There could therefore be a cultural bias implied in the definition of stress and burnout (Demo & Paschoal, 2016). Something that is perceived as stressful in one culture may not be perceived as stressful in another (Rath & Harter, 2010, p. 7; Imhof & Andresen, 2017).
Additionally, the questionnaire aimed to measure people's feelings, and since people perceive things differently, i.e., while a multi-project setting feels stressful for some, other may not find it as stressful (Gällstedt, 2003).

In regards of the distribution, we faced the challenge of collecting a big enough sample size. We struggled with getting enough respondents in the initial time limits and with distribution, this forced us to postpone the deadline and spend more time with distribution to get more respondents. One advantage of using the PLS-SEM software, is that it works very well with small samples. A larger sample size would have increased the precision of the estimations (Hair et al., 2017, p. 19). It is also important to note that the lack of significance in regards of the relationship between subjective stress and individual performance could be due to lack of power because of a relatively small sample size (Grebner et al., 2005).

Lastly, the relationships we tested and presented in this study are not proven to be causal relationships, but rather an indication of a relationship between variables. The design of the study is cross-sectional, and the results should be interpreted with caution. Additionally, our primary data collection relies on self-report measures, which means that shared method of variance can be having a potential explanation for the relationships. However, while self-report methods may have its weaknesses this is also the case for other methods as well (Spector, 1994). The sample is also prone to self-selecting bias, where those who choose to volunteer often have strong opinions about the subject at hand. Thus, we risked that those who did not have a strong opinion about the subject, choose to not participate, possibly deeming the sample inaccurate when generalizing a whole population (Gripsrud et al., 2011, pp. 136-137).

7.3 Suggestions for future research

This research provides a generalizable, although specific and limited study on the relationships between stress, burnout and performance among employees within project groups, as well as looking at how social support influenced these relationships and constructs. In order to carry out an in-depth study on this topic, the use of a qualitative research method is suggested, rather than a similar quantitative approach. Further, interviews or focus groups on some specific cases are recommended for cross-validating the results found in this study and uncovering the reasons behind these results.

Some of our result differed from other research, i.e. in regards of subjective stress and individual performance. Even as it turned out not to be significant in our study, we found that the relationship between subjective stress and individual performance had more of a fluctuating line than what the inverted-U theory suggested. This could be because of differentiation in cultures and other factors and should therefore be tested in different area of the world, as it would be interesting to see if it then is significant. Additionally, as coping is considered to be an important moderator for the stress-performance relationship, further research on the relationship between stress, burnout, coping behaviors (both emotional focused and problem focused), and the performance of project group members is necessary to understand the integrated stress management of project group members.

Another interesting direction for research could be to look at people within the same company and compare the stress and burnout levels of those working in projects with those that primarily work in the permanent organization, and also see if social support affects them differently. This could also be further linked up to performance on different levels. One could also conduct the same research initially done in this study, not only on the individual level, but also on a team or department level as well, to see if this would influence the result.

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Appendices

Appendix A: Survey

"Survey: Project Work and Its Implications for the Project Participants"

Aim and scope of the study

- Projects are used to generate innovation, solve complex problems and implement organizational change. However, project work can be stressful, include project overload, burnout and negatively affect productivity.
- This study is carried out by a team of researchers from the School of Business and Law, at the University of Agder, Kristiansand, Norway. The aim is to explore the consequences of project-based work for the individuals involved in projects. Our findings can be used to improve project work in companies by reducing the unsustainable project work practices and by supporting a productive project environment.

Duration

The survey will take less than 10 minutes.

Confidentiality

We treat all personal and company data as private and strictly confidential. The data will be used for scientific purposes only. Your responses will not be identified with you personally, nor will anyone outside the research team be able to determine which company you work for.

Contact

Please do not hesitate to contact the correspondent research team for any further information or questions.

- Scientific director: Andreas Wald (Professor)
- Coordinator: Maria Magdalena Agular Velasco (PhD Research Fellow)
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About the questionnaire

The questionnaire is based on short statements on a scale ranging from "**1"** to **"7".** When answering the questions, please relate your answers to **one completed project** that you were recently involved in.

You will notice that some questions appear to be similar. This is a deliberate technique to enhance the statistical reliability of the study. If you do not know how to answer a particular question, give your best estimate.

Thank you for taking the time to complete this survey!

A. GENERAL INFORMATION

[A.1. Personal Information]

1. What is your age?

_____ *years old*

2. What is your gender:

(1) ❑ Male

(2) ❑ Female

(3) ❑ Other

3. What is your highest completed level of education?

(1) ❑ High school or below

(2) ❑ Bachelor or equivalent

(3) ❑ Master's or higher

4. What is your marital status?

(1) ❑ Married/living with a partner

(2) ❑ Single/living alone

All of our following questions depart from the following definition of a project. A project is an undertaking to create unique product, service or result. A project has the following characteristics:

- A **specific objective**
- A **deadline**
- S**pecific resources** (e.g., a budget, staff etc.)
- **Separate from the regular organizational structure** (e.g. with a dedicated project team)
- A **non-routine task**
- A **minimum duration of four weeks**
- A**t least three participants**

5. How many years of experience with project-based work do you have?

_____ *years*

6. What type of projects are you usually involved in?

(1) ❑ Internal (i.e. projects which are carried out within the organization, e.g., R&D, IT, Infrastructure, Marketing or Sales projects, etc.)

(2) ❑ External (e.g., commissioned projects, for external customers, etc.)

(3) ❑ Both

7. What is normally your role in the projects?

(1) ❑ Project manager/project leader

(2) ❑ Project-team member

(3) ❑ Others, please specify: _____

8. In an average week, how many hours do you work in projects?

_____ *hours a week*

9. In which country were you (mainly) based during the life of your last project?

_____

[A.2. General Setting/Industry/Firm /Project]

10. When looking at your organizations main activities, to which of the following economic sector does your organization mainly belong?

(1) ❑ Manufacturing

(2) ❑ Construction

(3) ❑ Oil and Gas, Energy, Mining

(4) ❑ Retail, Transport, Warehousing, Hospitality, Tourism

(5) ❑ Banking, Financial Services & Insurance

(6) ❑ Information & communication

(7) ❑ Other Services (excluding financial)

(8) ❑ Fishery, Forestry, Agriculture

(9) ❑ Public Sector/Education/ Health Care

(10) ❑ Non-Governmental Sector (NGO) / Non-Profit

(11) ❑ Other. Please, specify: _____

11. How many people are employed by your firm? ***(Please specify to the best of your knowledge the number of full-time equivalent (FTE) if possible)***

_____ *Number of employees (FTE)*

12. What is the average duration of projects in your company?

[ ] *(in months)*

13. What is the approximate number of employees who worked in your last project?

_____ *Number of project team members*

14. How many projects are worked on simultaneously in your organization (on average)?

_____

B. Project Work

We understand project work context here as the project working conditions and resources (e.g., project work pressure, project demands and support.

[B.1. Project Workplace]

In the following you will find several statements on project workplace environment. Based on your own personal experience in a project you were recently involved in, to what extent do you agree or disagreed with these statements?

15. When working in my last project I perceived that...

	Strongly disagree	Moderately disagree	Slightly disagree	Neither disagree nor agree	Slightly agree	Moderately agree	Strongly agree
My workplace environment and climate were not very pleasant or satisfactory	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I felt depressed in my project-occupation	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I had full confidence that the organization would help me in the future	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

[B.2. Project Work Demands]

Listed below are a series of statements that represent possible feelings that project personnel might have about the project work. With respect to your own experience in a project that you were recently involved in, if you have had this feeling, please indicate how often you felt it by crossing the number (from 1 to 7) that best describes how frequently you felt that way.

16. When working in my last completed project I felt that ...

	Never	Almost never	Rarely	Sometimes	Often	Very often	Always
Project work made me feel emotionally drained	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I felt used up after project work	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I felt tired when I got up in the morning and had to face another day on the project	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Working all day in a project was really a strain for me	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I felt that I was weak and susceptible to illness	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I would feel comfortable when I completed the project tasks effectively	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I felt I was making effective contributions to what my company does	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I am able to effectively solve the problems in my project-based work	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I felt exhilarated after I accomplished something at my project	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
In my opinion, I was good at my project work.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I felt like I had accomplished many worthwhile things for society in my project work.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I just wanted to finish my work (at the project) and not be bothered.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I have become more cynical about whether my work (at	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

	Never	Almost never	Rarely	Sometimes	Often	Very often	Always
the project) contributed anything.							
I was not working as enthusiastically as before (in the projects)	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

[B.3. Project Work Support]

In the following you will find a few questions on the perceived project support from the project staff. With respect to your own experience about a project that you were recently involved in, please indicate how often you perceived the help and support from your project team members by checking the number (from 1 to 7) with each question.

17. When working in my last completed project….

	Never	Almost never	Rarely	Sometimes	Often	Very often	always
How often did your immediate project manager make an extra effort to make project work easier for you?	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
How often could your immediate project manager be relied upon to help when a difficult situation arose at the project work?	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
How often did your colleagues (team members) make an extra effort to make the project work easier for you?	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
How often could your colleagues (team members) be relied upon to help when a difficult situation arose at the project work?	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

[B.4. Social Environment Support]

We continue with two statements concerning social support from nonworkplace source. *Please indicate how often you experienced the help and support from individuals from your social environment (nonwork-related source) by checking one of the seven alternatives.*

18. When working in my last completed project…

	Never	Almost never	Rarely	Sometimes	Often	Very often	Always
I had the support I needed from my friends.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I had the support I needed from my partner/family.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

[B.5. Project Commitment]

Below are a series of statements that represent possible engagement that project personnel might have about the project for which they work. With respect to your own feelings about a project for which you have recently participated in, p*lease indicate to the degree of your agreement or disagreement with each statement by checking one of the seven alternatives after each statement.*

19. When working in my last completed project…

	Strongly disagree	Moderately disagree	Slightly disagree	Neither disagree nor agree	Slightly agree	Moderately agree	Strongly agree
I believed in the value of that project	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I thought the management was making a mistake by introducing this project.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
That project served an important purpose.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

	Strongly disagree	Moderately disagree	Slightly disagree	Neither disagree nor agree	Slightly agree	Moderately agree	Strongly agree
Things would have been better without that project.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
That project was not necessary	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I enjoyed working in that project.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

C. Project Work Outcome

Now, a few questions about project work outcome aspects. We understand project work outcome here as the individual's contributions to the project.

[C.1. Project Competences]

Below you will find a series of statements concerning the individuals' potential project work accomplishment. With respect to your own work results, what was your individual contribution to project work and please indicate how much that apply to your last completed project.

20. In my last completed project I…

	Strongly disagree	Moderately disagree	Slightly disagree	Neither disagree nor agree	Slightly agree	Moderately agree	Strongly agree
Carried out the core parts of my project work well.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Completed my core project task well using the standard procedures.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Ensured my project tasks were completed properly.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

[C.2. Project Work Flexibility]

We continue with a few statements concerning the individuals' project work adaptability. *Please indicate the degree of your agreement or disagreement with each of the following statements on project work proficiency.*

21. In my last completed project I…

	Strongly disagree	Moderately disagree	Slightly disagree	Neither disagree nor agree	Slightly agree	Moderately agree	Strongly agree
Adapted well to changes in core tasks in the project.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Coped with changes to the way I had to do my core project tasks.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Learned new skills to help me adapt to changes in my core tasks in the project.	(1) ❑	(2) ❑	(2) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

[C.3. Project Work Creativity]

In the following you will find several statements on project employees' proactivity. Based on your own personal experience in a project you were recently involved in, to what extent do you agree or disagreed with these statements?

22. In my last completed project I …

	Strongly disagree	Moderately disagree	Slightly disagree	Neither disagree nor agree	Slightly agree	Moderately agree	Strongly agree
Initiated better ways of doing my core tasks in the project.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Came up with ideas to improve the way in which my core project tasks were done.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Made changes to the way my core project tasks were done.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

D. Project Work Soft Resources

Lastly, few questions about the soft resources in projects. We understand project work soft resources here as the project participant's capacity to face risk, uncertainty and complexity effectively.

[D.1 Project Capabilities]

Please indicate to what extent you agree or disagree with each of the following statements on project work capabilities.

23. In my last completed project…

	Strongly disagree	Moderately disagree	Slightly disagree	Neither disagree nor agree	Slightly agree	Moderately agree	Strongly agree
I had confidence in my ability to do my project work.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I was very proud of my job skills and abilities.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I had all the skills needed to perform my job well.	(1) ❑	(2) ❑	(2) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

[D.2 Project Work Orientation]

24. Please indicate to what extent you agree or disagree with each of the following statements on project work orientation.

	Strongly disagree	Moderately disagree	Slightly disagree	Neither disagree nor agree	Slightly agree	Moderately agree	Strongly agree
In uncertain times, I usually expected the best (outcome) at project work.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I expected more good things to happen to me than bad things at project work.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

	Strongly disagree	Moderately disagree	Slightly disagree	Neither disagree nor agree	Slightly agree	Moderately agree	Strongly agree
I am optimistic about my future regarding my project work.	(1) ❑	(2) ❑	(2) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

[D.3 Project Achievements]

Please indicate to what extent you agree or disagree with each of the following statements on project work achievements.

25. In my last completed project…

	Strongly disagree	Moderately disagree	Slightly disagree	Neither disagree nor agree	Slightly agree	Moderately agree	Strongly agree
At that time, I was energetically pursuing my project work goals.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
If I should find myself in a jam at project work, I could think of many ways to get out of it.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
All the time, I was meeting my work goals (in the projects).	(1) ❑	(2) ❑	(2) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

[D.4 Project Work Soft skills]

Please indicate to what extent you agree or disagree with each of the following statements on project work general soft skills.

26. In my last completed project…

	Strongly disagree	Moderately disagree	Slightly disagree	Neither disagree nor agree	Slightly agree	Moderately agree	Strongly disagree
I usually managed difficulties one way or another at project work.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

	Strongly disagree	Moderately disagree	Slightly disagree	Neither disagree nor agree	Slightly agree	Moderately agree	Strongly disagree
I could be "on my own", so to speak, at the project if I had to.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I usually took stressful things at project work in stride (without hesitation).	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I could get through difficult times at work because I had experienced difficulty before.	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
I felt I could handle many things at a time (in the project)	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

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27. I learned about this questionnaire from...

(1) ❑ My organisation
(2) ❑ An industry or professional association
(3) ❑ The research team at the University of Agder
(4) ❑ Norsk Forening for Projsekledelse
(5) ❑ Svensk Projektforum
(6) ❑ Dansk Projektledelse
(7) ❑ Project Management Association of Finland
(8) ❑ Project Management Association of Iceland (VSF)
(9) ❑ PMI Norway Chapter
(10) ❑ PMI Sweden Chapter
(11) ❑ PMI Denmark Chapter
(12) ❑ PMI Finland Chapter
(13) ❑ Other, please specify: _____

Thank you very much!
You have now completed the questionnaire. We very much appreciate your time and expertise.
Please click "FINISH".

***

Appendix B: NSD Result

Result of Notification Test: Not Subject to Notification

You have indicated that neither directly or indirectly identifiable personal data will be registered in the project.

If no personal data is to be registered, the project will not be subject to notification, and you will not have to submit a notification form.

Please note that this is a guidance based on information that you have given in the notification test and not a formal confirmation.

For your information: *In order for a project not to be subject to notification, we presuppose that all information processed using electronic equipment in the project remains anonymous.*

Anonymous information is defined as information that cannot identify individuals in the data set in any of the following ways:

- *directly, through uniquely identifiable characteristic (such as name, social security number, email address, etc.)*
- *indirectly, through a combination of background variables (such as residence/institution, gender, age, etc.)*
- *through a list of names referring to an encryption formula or code, or*
- *through recognizable faces on photographs or video recordings.*

Furthermore, we presuppose that names/consent forms are not linked to sensitive personal data.

Kind regards,
NSD Data Protection

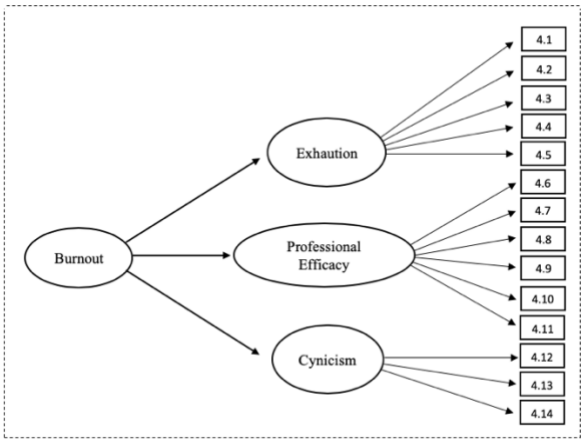
NSD – Norsk senter for forskningsdata AS Harald Hårfagres gate 29 Tel: +47-55 58 21 17 nsd@nsd.no Org.nr. 985 321 884
NSD – Norwegian Centre for Research Data NO-5007 Bergen, NORWAY Faks: +47-55 58 96 50 www.nsd.no

Appendix C: Constructs and items

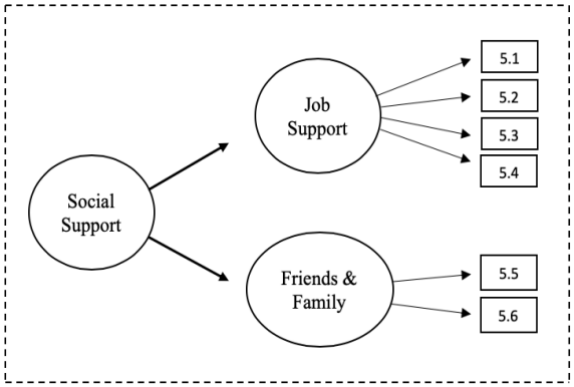
Construct	Item number	Item question
Subjective Stress	3.1	My workplace environment and climate were not very pleasant or satisfactory
	3.2	I felt depressed in my project-occupation
	3.3 (reversed)	I had full confidence that the organization would help me in the future
Exhaustion	4.1	Project work made me feel emotionally drained
	4.2	I felt used up after project work
	4.3	I felt tired when I got up in the morning and had to face another day on the project
	4.4	Working all day in a project was really a strain for me
	4.5	I felt that I was weak and susceptible to illness
Professional Efficacy	4.6 (reversed)	I would feel comfortable when I completed the project tasks effectively
	4.7 (reversed)	I felt I was making effective contributions to what my company does
	4.8 (reversed)	I am able to effectively solve the problems in my project-based work
	4.9 (reversed)	I felt exhilarated after I accomplished something at my project
	4.10 (reversed)	In my opinion, I was good at my project work.
	4.11 (reversed)	I felt like I had accomplished many worthwhile things for society in my project work.
Cynicism	4.12	I just wanted to finish my work (at the project) and not be bothered.
	4.13	I have become more cynical about whether my work (at the project) contributed anything.
	4.14	I was not working as enthusiastically as before (in the projects)

Job Support	5.1	How often did your immediate project manager make an extra effort to make project work easier for you?
	5.2	How often could your immediate project manager be relied upon to help when a difficult situation arose at the project work?
	5.3	How often did your colleagues (team members) make an extra effort to make the project work easier for you?
	5.4	How often could your colleagues (team members) be relied upon to help when a difficult situation arose at the project work?
Friends and Family	5.5	I had the support I needed from my friends.
	5.6	I had the support I needed from my partner/family.
Individual Proficiency	7.1	Carried out the core parts of my project work well.
	7.2	Completed my core project task well using the standard procedures.
	7.3	Ensured my project tasks were completed properly.
Individual Adaptivity	7.4	Adapted well to changes in core tasks in the project.
	7.5	Coped with changes to the way I had to do my core project tasks.
	7.6	Learned new skills to help me adapt to changes in my core tasks in the project.
Individual Proactivity	7.7	Initiated better ways of doing my core tasks in the project.
	7.8	Came up with ideas to improve the way in which my core project tasks were done.
	7.9	Made changes to the way my core project tasks were done.

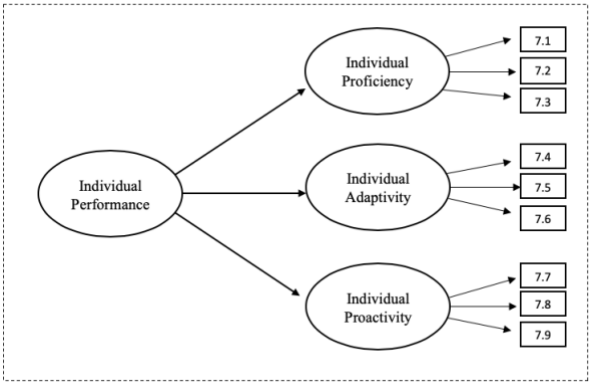
Appendix D: Burnout construct



Appendix E: Social Support construct



Appendix F: Individual Performance construct



Appendix G: Kurtosis and Skewness

Item	Kurtosis	Skewness
3.1	0.113	1.087
3.2	0.331	1.275
3.3	(0.754)	0.739
4.1	(0.800)	(0.011)
4.2	(0.718)	0.027
4.3	(0.167)	0.723
4.4	(0.650)	0.538
4.5	0.421	1.145
4.6	1.888	(1.198)
4.7	1.015	(0.903)
4.8	2.920	(1.309)
4.9	0.451	(0.678)
4.10	2.328	(1.082)
4.11	0.166	(0.754)
4.12	(0.338)	0.619
4.13	(0.881)	0.252
4.14	(0.305)	0.723
5.1	(0.578)	(0.096)
5.2	(0.575)	(0.350)
5.3	0.373	(0.365)
5.4	1.167	(0.956)
5.5	(0.244)	(0.429)
5.6	0.001	(0.819)
7.1	0.488	(0.856)
7.2	0.798	(0.867)
7.3	4.484	(1.640)
7.4	0.185	(0.772)
7.5	0.604	(0.805)
7.6	0.480	(0.802)
7.7	0.033	(0.539)
7.8	0.427	(0.740)
7.9	0.399	(0.675)

* All values in red are above desired values

** All values in ( ) are negative values

Appendix H: Cross loadings

Items	Subjective Stress	Exhaustion	Professional Efficacy	Cynisism	Job Support	Friends and Family	Individual Proficiency	Individual Adaptivity	Individual Proactivity
3.1	0.661	0.552	(0.272)	0.312	(0.329)	(0.197)	(0.332)	(0.150)	0.017
3.2	0.948	0.721	(0.353)	0.572	(0.468)	(0.266)	(0.422)	(0.242)	(0.099)
3.3	0.598	0.396	(0.357)	0.347	(0.253)	(0.219)	(0.244)	(0.152)	(0.117)
4.1	0.650	0.871	(0.253)	0.501	(0.469)	(0.201)	(0.333)	(0.106)	(0.119)
4.2	0.629	0.856	(0.284)	0.512	(0.437)	(0.104)	(0.284)	(0.128)	(0.098)
4.3	0.665	0.915	(0.284)	0.627	(0.419)	(0.122)	(0.370)	(0.169)	(0.044)
4.4	0.652	0.866	(0.387)	0.579	(0.447)	(0.234)	(0.441)	(0.279)	(0.107)
4.5	0.599	0.743	(0.353)	0.500	(0.304)	(0.201)	(0.291)	(0.134)	(0.047)
4.6	(0.349)	(0.220)	0.702	(0.204)	0.125	0.249	0.331	0.242	0.136
4.7	(0.415)	(0.374)	0.879	(0.237)	0.244	0.288	0.447	0.288	0.255
4.8	(0.326)	(0.274)	0.814	(0.241)	0.235	0.171	0.308	0.212	0.222
4.9	(0.236)	(0.211)	0.511	(0.150)	0.105	0.136	0.153	(0.030)	0.169
4.10	(0.189)	(0.175)	0.836	(0.193)	0.143	0.279	0.330	0.273	0.357
4.11	(0.312)	(0.352)	0.605	(0.164)	0.267	(0.006)	0.344	0.163	0.170
4.12	0.406	0.440	(0.124)	0.738	(0.250)	(0.288)	(0.133)	(0.174)	(0.093)
4.13	0.307	0.346	(0.196)	0.739	(0.313)	(0.187)	(0.269)	(0.155)	(0.110)
4.14	0.619	0.675	(0.297)	0.899	(0.444)	(0.209)	(0.367)	(0.278)	(0.104)
5.1	(0.368)	(0.373)	0.156	(0.359)	0.720	0.307	0.295	0.186	0.193
5.2	(0.348)	(0.423)	0.157	(0.411)	0.770	0.287	0.333	0.203	0.236
5.3	(0.320)	(0.311)	0.205	(0.236)	0.782	0.346	0.399	0.212	0.368
5.4	(0.422)	(0.382)	0.262	(0.321)	0.768	0.328	0.435	0.275	0.228
5.5	(0.327)	(0.180)	0.243	(0.196)	0.384	0.873	0.276	0.272	0.154
5.6	(0.208)	(0.181)	0.229	(0.293)	0.356	0.898	0.310	0.295	0.141
7.1	(0.332)	(0.296)	0.507	(0.341)	0.376	0.343	0.822	0.520	0.381
7.2	(0.435)	(0.443)	0.279	(0.276)	0.406	0.202	0.792	0.292	0.053
7.3	(0.285)	(0.216)	0.262	(0.166)	0.379	0.242	0.784	0.390	0.268
7.4	(0.205)	(0.085)	0.221	(0.213)	0.306	0.358	0.412	0.884	0.204
7.5	(0.282)	(0.237)	0.292	(0.216)	0.193	0.228	0.500	0.886	0.187
7.6	(0.123)	(0.165)	0.189	(0.234)	0.217	0.196	0.324	0.691	0.472
7.7	(0.087)	(0.046)	0.265	(0.092)	0.269	0.145	0.217	0.297	0.901
7.8	(0.100)	(0.089)	0.301	(0.084)	0.362	0.177	0.344	0.347	0.954
7.9	(0.112)	(0.136)	0.272	(0.177)	0.303	0.140	0.246	0.275	0.943

* All values in green are desirable values

** All values in ( ) are negative values

Appendix I: Outer loadings

Items	Subjective Stress	Exhaustion	Professional Efficacy	Cynisism	Job Support	Friends and Family	Individual Proficiency	Individual Adaptivity	Individual Proactivity
3.1	0.661								
3.2	0.948								
3.3	0.598								
4.1		0.871							
4.2		0.856							
4.3		0.915							
4.4		0.866							
4.5		0.743							
4.6			0.702						
4.7			0.879						
4.8			0.814						
4.9			0.511						
4.10			0.836						
4.11			0.605						
4.12				0.738					
4.13				0.739					
4.14				0.899					
5.1					0.720				
5.2					0.770				
5.3					0.782				
5.4					0.768				
5.5						0.873			
5.6						0.898			
7.1							0.822		
7.2							0.792		
7.3							0.784		
7.4								0.884	
7.5								0.886	
7.6								0.691	
7.7									0.901
7.8									0.954
7.9									0.943

Appendix J: Fornell-Larker Criterion and HTMT Ratio

Construct	Cynisism	Exhaustion	Friends and Family	Individual Adaptivity	Individual Proactivity	Individual Proficiency	Job Support	Professional Efficacy	Subjective Stress
Cynisism	0.795								
Exhaustion	0.643	0.852							
Friends and Family	(0.277)	(0.203)	0.885						
Individual Adaptivity	(0.265)	(0.186)	0.327	0.825					
Individual Proactivity	(0.124)	(0.097)	0.166	0.329	0.933				
Individual Proficiency	(0.33)9	(0.401)	0.335	0.505	0.303	0.800			
Job Support	(0.438)	(0.490)	0.416	0.296	0.337	0.483	0.760		
Professional Efficacy	(0.273)	(0.365)	0.267	0.283	0.301	0.453	0.258	0.736	
Subjective Stress	0.586	0.750	(0.298)	(0.248)	(0.107)	(0.439)	(0.480)	(0.418)	-

* All values in green are desirable values

** All values in ( ) are negative values

*** Subjective Stress is a formative construct, and will therefore not display an AVE value, marked with "-"

	Cynisism	Exhaustion	Friends and Family	Individual Adaptivity	Individual Proactivity	Individual Proficiency	Job Support	Professional Efficacy
Cynisism								
Exhaustion	0.762							
Friends and Family	0.394	0.251						
Individual Adaptivity	0.350	0.235	0.427					
Individual Proactivity	0.158	0.105	0.202	0.417				
Individual Proficiency	0.433	0.488	0.452	0.671	0.353			
Job Support	0.574	0.589	0.564	0.380	0.399	0.650		
Professional Efficacy	0.337	0.426	0.344	0.348	0.342	0.551	0.332	

* All values in green are desirable values

Appendix K: Multigroup Analysis

	Path Coefficients Original (Female)	R Square Adjusted Original (Female)	Path Coefficients Original (Male)	R Square Adjusted Original (Male)	Path coefficient difference	p-Value(Female vs Male)
Subjective Stress -> Individual Performance	0.006		0.031		0.025	0.941
Burnout -> Individual Performance	(0.182)		(0.376)		0.194	0.586
Social Support -> Individual Performance	0.545	0.398	0.389	0.338	0.156	0.475
Moderating Effect SSI -> Individual Performance	(0.154)		(0.181)		0.027	0.926
Moderating Effect SBI -> Individual Performance	0.322		0.063		0.259	0.375
Subjective Stress -> Burnout	0.617		0.694		0.077	0.767
Social Support -> Burnout	(0.258)	0.580	(0.183)	0.597	0.075	0.696
Moderating Effect SSB -> Burnout	(0.008)		0.053		0.061	0.692

* All values in ( ) are negative values
** All values in red are unsignificant values

	Path Coefficients Original (Project Manager)	R Square Adjusted Original (Project Manager)	Path Coefficients Original (Project Member)	R Square Adjusted Original (Project Member)	Path coefficient difference	p-Value(Project Manager vs Project Member)
Subjective Stress -> Individual Performance	0.036		(0.170)		0.206	0.566
Burnout -> Individual Performance	(0.249)		(0.574)		0.325	0.391
Social Support -> Individual Performance	0.428	0.274	0.177	0.491	0.251	0.302
Moderating Effect SSI -> Individual Performance	(0.175)		(0.265)		0.090	0.811
Moderating Effect SBI -> Individual Performance	0.048		0.199		0.151	0.663
Subjective Stress -> Burnout	0.711		0.625		0.086	0.677
Social Support -> Burnout	(0.215)	0.650	(0.129)	0.522	0.086	0.658
Moderating Effect SSB -> Burnout	0.087		(0.070)		0.157	0.364

* All values in ( ) are negative values
** All values in red are unsignificant values

Appendix L - Reflection note by Aleksander Halkjelsvik Aabel

This reflection note is written in order to show my reflections made while writing my master thesis and to obtain my master's degree in Business and Administration from the School of Business and Law at the University of Agder. The aim is to reflect over how the master program connects with three main topics: internationalization; innovation; and responsibilities. These are the core areas of reflection by the School of Business and Law at University of Agder. The master thesis was written in a group of two, by Markus Lie Aasland and I.

The aim of this reflection note is for me to share what kind of reflections and knowledge I have obtained through this time writing my master thesis. As I have taken the path of international management (Master program direction), I focused on picking a topic for my thesis that fitted well with this, after some back and forth, the topic of project work and the ''side-effects'' was the one we landed on at the end. I also thought I wanted to work in some kind of project-based work setting after graduating and writing a master thesis on the subject would give me an advantage on that front.

The main purpose of our thesis was to look at some of the negative sides of project-based work, more specifically, how subjective stress and burnout related to individual performance in project-based work, since little research on this specific topic had been done in the Nordic countries, we wanted to explore this further. The use of project-based work is rapidly increasing all over the world and are now not only used in specific circumstances. Seeing that 30% of the global economy is made by project work (Turner, 2009), and that by the year 2020 the share of project work in the Norwegian economy will be at 33.8% (Schoper et al., 2018), we can clearly see how popular project-based work has become. According to Lundin and Söderholm (1998), the Western economies seems to be leaning towards a ''projectified society'', in where project work is not only used for handling extraordinary undertakings, but also used to handle increasingly more of the organizations' everyday operations.

As project-based work are rapidly increasing and getting more and more attention in research making our topic highly relevant and interesting not only for us as researchers, but also for the people working with projects and the society as a whole.

Seeing that there was vastly more research done on the positive sides of project-based work, we wanted to contribute with some more research on the negative sides. By using the MBI-GS survey and the inverted-U-model as the starting point of our study, we quantitatively assessed the research gap of how project work exposure (subjective stress and burnout) impact employees' individual performance. While the main hypothesis considered that high levels of stress and burnout would have a negative effect on individual performance, while low levels (especially in burnout) would lead to higher individual performance. We also included a moderating variable of social support, which based on the literature could have both a direct and moderating effect on our independent variables. A primary data collection was done through a web-based questionnaire, and the final analysis was based on 108 respondents. The data was analysed in the PLS-SEM program.

The result off our study indicated that all of the independent variables with the exception of subjective stress had a significant effect on individual performance. We found an interesting relationship between subjective stress and individual performance (even though it turned out not to be significant) showing that little to moderate levels of stress gave high degree of individual performance, while moderate to high levels gave a low degree, while the most surprising found where that extreme levels of stress gave the highest level of individual performance, in big contrast to what the inverted-U-model suggests. The Social Support variable had a role of both moderating variable and independent variable. social support and individual performance showed a positive relationship with a moderate strength, indicating a moderate positive relationship between the variables. There is a moderate negative relationship between social support and burnout. In our model, social support seemed to have a great effect on individual performance, but only a moderate effect on burnout. subjective stress seemed to have a just above small effect on Individual Performance, while it had a very large positive effect on burnout.

Our topic relates to broader international trends in several ways. First, project management is used in all kind of work in today's society and has become an influential management fashion. Since the use of project-based work now stands for more than 30% of the world's economy (Turner, 2009, p. 1), it makes it a highly relevant research topic and as mentioned, especially looking at the negative aspects. Second, in order to stay profitable, organizations now a days must be able to rapidly adapt to customers' demands as customers now have more knowledge on what they want then they did before.

In additional to this, organizations have the opportunity to become bigger and more powerful than ever before because of the globalization, but this also mean that they have more competition than ever before as well, as they have to compete not only with national organizations, but also international organizations. In order to meet all these new demands, structuring the organization into projects seems to be one of the favourable ways to go, as projects seems to meet these challenges and keep competitive advantage. Third, globalization is making the world a smaller place and global firms can by structuring organizations into projects, create projects teams across borders dependent on what competences they need. This also makes cooperation with other organizations easier, and the smart thing by establishing projects instead of permanent organizations is that they can regulate it very easily.

Further, our topic also relates to innovation. One of the positive characteristics used to explained and describe project-based work is innovation, as innovation can be understood as the creation of new ideas or solution, and the process of making these ideas into reality. Since projects always carry uncertainty in themselves, though risk analysis is an important tool of project management, several unforeseen problems can occur during the project and by fail smart one can move on to more attractive options, thus be innovative. R&D projects are also example of innovation in project work, as their main work is involved in research and development.

Furthermore, on our topic and responsibility. Research suggest that the working conditions in project-based work makes the employees especially prone for stress, burnout and other health related problems. The complexity and dynamic work settings that project work contains create high amount of pressure on the employees (Turner et al., 2008). One way to better these conditions is for organizations and employers to take more responsibility for employees' well-being, including making sure that employees do not get to stressed over a long period of time or burnout. Some research points to getting the same HRM practises concerning employees' health conditions in project-based work as in permanent work, and that this would lead to a decrease in negative emotional experiences seen in project work, because it then could be better handled (Lindgren et al., 2014). On the other side, a vast number of employees likes working in a project-based environment and the positive sides my outweigh the negative sides of project-based work.

People are different, one person may look at a stimulus and perceive it as a challenge to overcome on the path to mastery and growth, while a different person may see the same stimulus as a threat (Senaratne & Rasagopalasingam, 2017).

To summarize, one can say that project-based work has become an international rapidly increasing trend which also foster innovation. It is very important to keep responsibility in mind by acknowledge the strains project-based work can have on the employees and ensure good ways of coping with these, here lies a big responsibility on the organizations and employers. The whole process writing this thesis have been a mini project in itself and has been challenging, but also highly interesting and not to mention educational. While we are happy and satisfied with being able to support three out of six hypotheses, we found it somehow disappointing that none of the hypothesis containing our moderator could be supported. This could be partially explained by the fact that we use subjective stress as a independent variable and not objective stress or a combination of the two, which has to our knowledge not been done before in the same environment as our research. As I look back at the whole master program experience as a whole, I am really proud of myself and all the things I have been able to do and learn, even though it has been very challenging at times. I am grateful for the opportunities that is has provided me with.

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Appendix M - Reflection note by Markus Lie Aasland

As part of this master thesis in Business and Administration from the School of Business and Law at the University of Agder, it is required to write a reflection note about the experience of conducting this research. The aim of the note is for me to reflect on the experience of writing, collecting data and discussing results of my master thesis, as well as reflecting on my experience as a student in this master program and how this prepared me to conduct this research. This master thesis was written in a group of two, as is normal for this master program. I wrote this thesis together with Aleksander Halkjelsvik Aabel.

The theme for this master thesis was "How subjective stress, burnout and social support affects individual performance in project-based work", where we look at some of the negative aspects of working in projects. Over the last few decades, an increase in project-based work can be seen, and there is much research done on the positive effects of this. However, in order to benefit fully from a more projectified work life, it is important to be aware of the potential negative effects that can arise. By being aware of these effects, one can try to detect, avoid and negate them, and thus potentially benefit even more from projects. We found several articles that suggested there could be some negative effects from working in projects, such as project participants experiencing higher amounts of stress (Senaratne & Rasagopalaingam, 2017) and potentially being affected by burnout (Yang et al., 2017), and how this could impact the performance of the project participants and the outcome of the project itself. We wanted to look further at the individual level by analyzing the effects on individual performance.

For this research, we chose a quantitative approach through the use of a web-based questionnaire. Our final analysis was based on a sample of 107 valid respondents. We analyzed the data applying PLS-SEM, through the program SmartPLS 3. We looked at the direct effects of subjective stress, the mediating effects of burnout, and the direct and moderating effects of social support on individual performance.

The results showed us that there is no significant relationship between subjective stress and individual performance, and further showed us that social support have no moderating effect on any of the relationships in our research model. This was rather surprising, as we discussed in our thesis, based on the literature we have analyzed for this study.

Some other interesting findings were that social support had a stronger positive effect on individual performance than the mediating effects of burnout, thus indicating that you could have increased individual performance even when affected by burnout, given you have strong social support. Specifically, support from your place of work (co-workers and manager) was important. We also saw that the more hours you worked (project-based) a week, the higher the performance the participants reported, and the project participants who worked in external projects had higher performance than those who worked in internal or a combination of both types. We further found that the higher the experience, the higher amounts of social support, and the lower amount subjective stress and burnout the respondents reported.

Project-based work is increasingly relevant, and we see an increase in both temporary organizing and research on the subject. We can find these trends both on a national scale and an international scale. Therefore, it is important to explore what effects project-based work have on the project participants. Conducting research in different parts of the world is also necessary, as cultural differences could affect the results. For example, we found as expected low amounts of stress and burnout here in the Nordics, while research conducted in Asia and Africa tend to show higher amounts of stress and burnout. As the markets tend to become increasingly global, and organizations operating in multiple nations simultaneously, differences such as these are important to be aware of. It is important to note that there could be multiple benefits for such large organizations to focus on projects, as they could create and manage project teams with multiple nationalities and different competences. Organizations could also cooperate with other organizations, simply by creating and running a project together, instead of creating new permanent organizations.

Project-based work is further known as being beneficial in regards of innovation. Permanent organizations could gather the desired competences from different parties together to form a temporary organization or project group with the specific purpose of generating, improving or applying new ideas. Project-based work will also ensure a working environment which is more dynamic, thus making the workers and the organizations more adaptable.
Being able to adapt to changes is crucial for success in today's global market, which is fast-paced and innovation-seeking. Therefore, it is important to tap into knowledge and experience across departments, across companies, and even across industries, to be as innovative as possible. This is where knowledge of project-based work is necessary.

The focus of this research has also been on subjective stress, burnout and social support. All in regard to project work. In the theme of responsibility and accountability, being aware of the negative effects of subjective stress and burnout, and the positive effects of social support, is important for all organizations who practice projects. Burnout, a higher developed level of stress, could reduce the productivity and performance of the employees. On the opposite end, having sufficient social support from the work place could increase the performance. It is the organizations responsibility to ensure that they social environment in the work place is healthy, and that the mental health of the employees is taken care of. It is well known that the cost of treatment is greater than the cost of prevention, thus ensuring the workers keep an optimal level of stress is advised, preventing it developing further to burnout.

To conclude this reflection note, I would like to mention that conducting this research and writing the master thesis has been both challenging and rewarding. The subject of mental health is highly important, while often neglected. It is therefore important to provide research that proves the relationship between mental health, in our case subjective stress and burnout, support and performance. We wanted to look at the individual level, as research conducted on project work is often done at a group- or organizational level. This has sparked a lot of interest from both my part, and those I've encountered along the way during the writing of this thesis. The knowledge, experience and opportunities this research has brought me, will I take with me in the next stage of my life.

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