

Employee Engagement and Innovation in Organizations

**The impact of variables on organizational, team and
individual level.**

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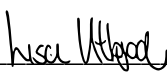
Preface

During the thesis program in Business Administration over the past two years at the Business School of the University of Stavanger, we have been exposed to a wide range of topics, which helped us to increase our knowledge and skills in several areas of interests. We would like to sincerely thank the Business School at UiS for their great dedication for providing us with educational opportunities and challenges along the way. Their approaches to teaching and use of resources during these two past years have encouraged active discussions in class, resulting in an interesting learning environment. We would especially want to thank the professors at UiS who have enriched our academic experiences by providing us with high-quality education.

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Lastly, we want to express our sincere gratitude to our family and friends, who have supported us and served as our sources of inspiration and motivation this semester. We also wish to express our gratitude to the Business School for making our time at UiS special and memorable.

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Abstract

This thesis examines the relationship between the dependent variables' employee engagement and innovation, focusing on various antecedent variables. The primary objective of this study is to explore the relationship between employee engagement and innovation and how the variables influence each other. Additionally, the thesis seeks to determine the extent to which organizational factors (transformational leadership, autonomy, and job demand), team factors (age discrimination and innovation climate), and individual factors (work-life balance, weekly working hours, gender and age, and organizational factors) predict employee engagement and innovation in organizations. Moreover, the study examines whether these relationships remain consistent when predicting employee engagement and innovation across the three levels.

The data used in this study is gathered through surveys with a quantitative research method. The data sample consisted of a representative sample of Norwegian employees, and in that way, providing a diverse perspective on the topic. Furthermore, to ensure the data's quality, various statistical methods were used to evaluate the reliability, validity, and correlations between variables. The reliability and validity of the measuring scales used were evaluated using factor analysis. The relationships between the chosen variables were also investigated using Pearson's bivariate correlation analysis. Lastly, multiple hierarchical regression analyses were employed to explore the relationships between the independent and dependent variables.

The results highlight several key findings at all three levels. At the organizational level, TL, autonomy, and special competence job demands were significant predictors of employee engagement and innovation. Organizations that exhibit transformational leadership behaviors, give employees autonomy, and provide job demands that align with their specialized skills and abilities are more likely to experience higher engagement and innovative contributions. The study reveals the importance of an innovation climate at the team level in promoting employee engagement and innovation. A positive innovation climate encourages employees' innovativeness, leading to increased engagement. Furthermore, at the individual level, work-life balance significantly influences both variables. However, contrary to prior research, the findings indicate that a lower work-life balance fosters higher levels of employee engagement and innovation. This study contributes to a deeper understanding of the complex relationship between all three levels in shaping employee engagement and innovation.

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1.0 Introduction

This study investigates the potential relationship between employee engagement and innovation in organizations. Furthermore, it explores how the selected individual, team, and organizational factors can predict organizational employee motivation and innovation. Additionally, the study seeks to examine how closely the patterns of the two dependent variables resemble each other when derived from independent factors.

The study consists of six chapters, each addressing specific aspects of the research. The first chapter introduces the topic and explains the purpose of the study. Furthermore, an explanation of the background of the study, our motivation, and research questions will be presented in this chapter. In the second chapter, a theoretical background on employee engagement and innovation will be provided. This chapter will also incorporate relevant literature on the antecedent variables on all three levels. This chapter aims to provide literature supporting our hypotheses regarding the relationship between the selected independent and dependent variables. The third chapter describes the methodology that is used for the study, including collection of the data and the analyses. In the fourth chapter, the results will be presented. The results will confirm or reject our initial hypotheses developed from the theoretical background. In the fifth chapter, we discuss the findings in detail and explore the implications for existing research. Finally, in the sixth chapter, we provide a conclusion summarizing our key findings.

1.1 Background of study

This study examines the antecedents of the two positive outcome variables: employee engagement and innovation in organizations. The selected antecedent variables are categorized into three levels to understand how engagement and innovation are preceded by the organizational, team, and individual variables. To fully grasp how organizations can benefit from increased levels of employee engagement and innovation, it is essential to understand the contributing factors and how to make employees engage and develop innovative work behavior that will benefit the organization.

Employees who are continuously motivated internally and externally tend to show engagement in work and perform better, which is beneficial for the organization through increased production and productivity (Bin & Shmailan, 2015; Sabir, 2017). There are various definitions

of employee engagement, but one thing that most researchers seem to agree on is that employee engagement is a “*desirable condition that has an organizational purpose and represents both attitudinal and behavioral components such as involvement, commitment, passion, enthusiasm, focused effort, and energy*” (Macey & Schneider, 2008, p. 4), hence why organizations need to understand the impacting factors on employee engagement.

Another important factor when addressing organizations’ competitive advantages and success is innovation. Innovation helps small and large organizations stay competitive by developing new and valuable ideas to increase efficiency and meet customers’ ever-changing needs and expectations. Like employee engagement, the term innovation has many interpretations. Thompson (1965, p. 2) described innovation as “*the generation, acceptance and implementation of new ideas, processes, products or services.*” In recent years, many studies on employee engagement and innovative work behavior have been carried out, providing empirical evidence of a positive relationship, and linking them to organizational performance (Bhatnagar, 2012; Agarwal, 2014; Gichohi, 2014). The purpose of this study is to give a contribution to existing literature.

The data that will be used for this study was conducted in 2021 by the National Survey of Norwegian Working Life. The antecedent variables of employee engagement and innovation in organizations that will be used are all independent variables, and on the organizational level following variables have been selected: transformational leadership (TL), autonomy, and job demand. Further, the selected variables on the team level are age discrimination and innovation climate. Lastly, on the individual level, the variables are gender, age, weekly work hours, and work-life balance. Figure 1 and Figure 2 illustrate an overview of the independent variables chosen for this study and the two positive outcomes, which is an overall representation of the object of the study.

Figure 1: Antecedents of Employee Engagement

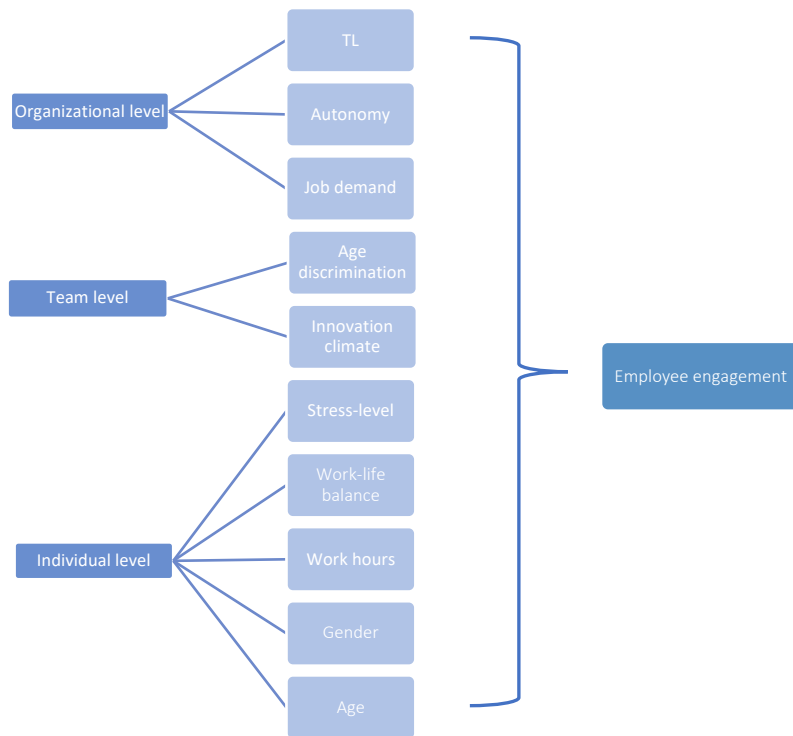
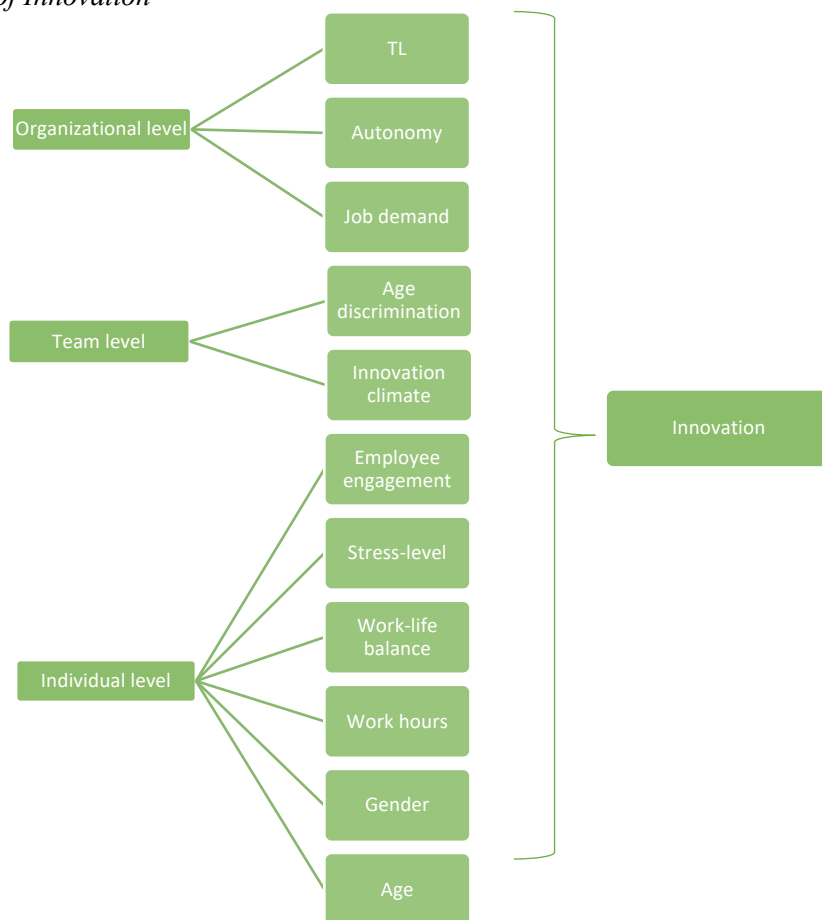


Figure 2: Antecedents of Innovation



1.2 Motivation and research questions

The motivation for our master's thesis topic has roots in our specialization, which is "Leadership in a Digital Economy". As there has been identified several leadership styles throughout the years, the initial thought was to investigate which leadership style is the most influential in relation to engagement and digitalization. As today's innovative ideas and processes are often related to digital technologies that help improve organizational processes and services, and is highly relevant for all organizations, we wanted to gain more knowledge on this topic. We wanted to deepen our understanding on what drives employee engagement and innovations in organizations as both variables are important factors for organizational success.

To investigate the antecedent variables of employee engagement and innovation, it is important to have research questions that can serve as a framework for the research. Having well-defined research questions will also help establish a systematic approach for the study and avoid the objective being too broad. The research questions developed for this thesis aims to cover the relationship between the chosen dependent variables and the antecedent variables. There are five research questions that we seek to answer in this study. The questions are presented in Table 1.

Table 1: Research question overview

RQ	Question
1	How does transformational leadership, autonomy, and job demand at the organizational level impact employee engagement and innovation in organizations?
2	To what extent do innovation climate and age discrimination at the team level influence employee engagement and innovation within organizations?
3	What is the relationship between age, gender, weekly working hours, stress-level, and work-life balance at the individual level with employee engagement and innovation in organizations?
4	Are there any significant interactions or moderating effects among the antecedent variables across different levels (organizational, team, and individual) when examining their impact on employee engagement and innovation?
5	How do the interactions between the antecedent variables at different levels influence the relationship between employee engagement and innovation in organizations?

2.0 Theoretical background and hypotheses of the study

The theoretical background of this thesis aims to provide a comprehensive overview of the key concepts, theories, and existing research that will set the foundation of our study. By examining existing theory, we can gain valuable insights into the factors influencing the dependent variables, employee engagement and innovation, and their relationship. We will look at a set of antecedent variables from the National Survey of Norwegian Working Life conducted in September 2021. Based on the theoretical framework, we will propose a set of hypotheses that will guide our empirical research. The analysis will be conducted at multiple levels, including organizational, team, and individual.

2.1 Dependent variables

2.1.1 Employee engagement

Motivation is originated in Latin as the word "movere", which means "to move forward" (Islam & Ismail, 2008, p. 344). A high level of motivation among employees to promote their performance is an essential factor for an organization to succeed. For decades, numerous studies have focused on motivation and employee motivation. Every company wants its employees to give their best effort to achieve a positive financial outcome for the company and a good working environment. Employee motivation can be described as a force that drives people toward various goals (Shahzadi, Javed, Pirzada, Nasreen & Khanam, 2014). It is defined by Shahzadi et al. (2014) as *"a reflection of the level of the energy, commitment, and creativity that a company's workers bring to their jobs"* (p. 159).

Every individual is motivated differently, and leaders in organizations want motivated employees to complete their work tasks with great effort. According to Honore (2009), several factors influence employee motivation. Employees are likely to value motivation differently because each person has unique and personal needs (Honore, 2009). The employees must be aware of the goal that will be achieved, and they must also be willing to give of themselves to achieve the goal (Islam & Ismail, 2008). Employees must understand why they are performing their tasks and what the task means to them. They are unlikely to achieve their goal if they are not aware of this and are not motivated. An engaged employee also collaborates with coworkers to raise performance levels for the organization's benefit (Mohanam, Sequeira & Kumar, 2012). Employee motivation is proven to be influenced by employee engagement, leading to increased

job performance (Tampubolon, 2017). The term is also explained as one of the key factors to organizational success (Saks & Gruman, 2014). In this study, we have chosen to research employee engagement further, as there has been little to no research on this within organizations in Norway.

Even though the term "employee engagement" has existed for many decades, there seem to be various definitions that one can find and disagreements about the term. Research also found that the term refers to employee engagement, job engagement, and work engagement. Schaufeli and Salanova (2011) describe employee engagement as a broad concept that includes the connection between the employee's role within the organization, and later they indicated that the terms "employee engagement" and "work engagement" might be used interchangeably (Schaufeli, Shimazu, Hakanen, Salanova & De Witte, 2017). Therefore, "employee engagement" will be used in this thesis instead of "work engagement."

The term employee engagement was introduced in 1990 by Kahn, and he described it as *"the harnessing of organization members selves to their work roles"* (p. 694). The idea was that by employing and expressing at work, employees would physically, cognitively, and emotionally integrate with the role (Kahn, 1990). According to Thomas (2009), employee engagement is a term organization use to describe the kind of motivation needed in the workplace. The term "employee engagement" is, according to Thomas (2009), used differently without a precise definition and gives the term a more precise and meaningful definition as *"to the extent to which individuals actively engage in self-management in their work"* (p. 11).

Furthermore, Bhuvanaiah & Raya (2015) explains three different level of engagement; *"engaged, not engaged, and the disengaged"* (p. 93). According to this model, engaged employees are passionate and consistently demonstrate innovation and commitment to the workplace. This is consistent with other findings showing that employee engagement has a significant impact on employee performance (Anitha, 2014; Azizah & Gustomo, 2015; Saxena & Srivastava, 2015; Sendawula, Kimuli, Bananuka, & Najjemba Muganga, 2018; Fidyah & Setiawati, 2020), which can be explained by the model where the engaged employees put more effort into their work because they are more passionate about their work tasks, and therefore provide a higher effort which can increase their performance. Employees who are barely trying to complete their work tasks fall into the middle level of this model, and employees who intentionally transmit their discontent to other coworkers fall into the bottom level (Bhuvanaiah

& Raya, 2015). The model's purpose is to identify employee levels so that unengaged employees can potentially become engaged with the right resources and assistance from leaders.

According to Bhuvanaiah & Raya (2015), employees prefer to work in roles that provide them with psychological satisfaction rather than a monetary incentive. The study identifies four vital drives for engaged employees: *“decision-making authority, opportunities for growth and development, empowerment and fair treatment, and leadership”* (p. 95). The study also shows that motivating and retaining employees requires ongoing effort but that it is possible to do so by providing opportunities and strong leadership. Maintaining employee motivation can sometimes be a difficult task with numerous variables that may impact engagement. However, it also highlights the value and importance of a high level of engagement among employees in organizations.

2.1.2 Innovation in Organizations

The ability to innovate and be creative at work has become increasingly vital to impact organizational performance, success, and long-term survival. As a result of new technological possibilities, innovation enables organizations and their employees to envision and generate new working practices that use these opportunities and produce new value propositions (Cai, Khapova, Bossink, Lysova & Yuan, 2019). However, innovative processes must be appropriately managed to fully benefit from the advantages of new and improved ways of working, as they are complex and often takes time to develop. Although both terms have been given several definitions, researchers still have no general understanding of what correctly defines creativity or innovation. In this study, a definition of innovation and creativity by Anderson, Potočnik, and Zhou (2014) will be used to explain innovation in organizations. The definition is: *“Creativity and innovation at work are the processes, outcomes, and products of attempts to develop and introduce new and improved ways of doing things. The creativity stage of this process refers to idea generation, and innovation refers to the subsequent stage of implementing ideas toward better procedures, practices, or products”* (Anderson, Potočnik & Zhou, 2014). Creativity and innovation can emerge at different levels (individual, work teams, and organizations), where positive outcomes can be seen and measured regardless of where they occur (Anderson, Potocnik & Zhou, 2014).

Furthermore, research by Janssen (2000) uses innovative work behavior to describe innovation in organizations, where the term is defined as “*complex behavior consisting of a set of three different behavioral tasks: idea generation, idea promotion, and idea realization*” (p.288). Idea generation, as in creating new and valuable ideas in any field, is conceived as the first step towards individual innovation. Promoting ideas to possible partners or decision-makers in the organization is the next step in the innovation process. This phase is characterized as the time after a worker has developed an idea, he or she must engage in social events to identify friends, sponsors, and supporters of the idea or assemble a group of supporters who will provide the necessary assistance. This level of innovation is especially relevant because at this point, many ideas just fade out due to a lack of support or attention in their first stages. Ultimately, the innovation process results in conceptual manifestation by developing a prototype or model that may be tested and implemented within a job role, a group, or the entire organization (Janssen, 2000).

To fully optimize the organization for innovation, it is crucial to understand what motivates creativity that ultimately leads to the success of implementing the innovations. Throughout the years, several studies have examined the relationship between innovation and perceptions of the work environment. Amabile, Conti, Coon, Lazenby, and Herron (1996) developed a model consisting of conceptual categories of work environment factors that are predicted to be both positively and negatively related to creativity. The categories include encouragement of creativity, autonomy or freedom, resources, pressures, and an organizational impediment to creativity. The first dimension regarding the encouragement of the generation and development of new ideas operates at three levels within the organization, with organizational encouragement being commonly mentioned in the literature, and the other levels are known as supervisory- and workgroup encouragement (Amabile et al., 1996). The research emphasizes the importance of a supportive work environment to enhance creativity and innovation in the organization and how a worker’s ability to generate new and valuable ideas depends on the support from employers.

Job autonomy, or perceived freedom to complete given tasks, is also essential when discussing innovative work behavior. When autonomy or freedom is given, employees may engage by experimenting and ultimately discover more efficient ways of doing their work. Moreover, it is believed to give them a chance to be creative and innovative through the concept of “trial and error,” which is an important aspect of innovation (Ramamoorthy, Flood, Slattery & Sardesai,

2005). Employees are more likely to engage in innovative work behavior because they work in environments that encourage innovation and receive support for bringing their ideas into practice (Ramamoorthy et al., 2005). Having complete control over their work could enhance the work-life experience and motivate innovative behavior. Employees who are creative but work in traditional productivity-driven organizations with, e.g., a lot of time pressure and strictly regulated and standardized work tasks may therefore experience less encouragement to develop the desirable creative behavior. Both innovation climate and autonomy will be discussed further in the next section, as they will be used as antecedent variables to predict employee engagement and innovation in organizations, along with other variables selected from the National Survey of Norwegian Working Life (September 2021). Moving on, innovation in organizations will be referred to as “innovation” in the following chapters of this study. For a company to succeed in today’s competitive market, innovation is crucial. In order to foster innovation in an organization, research suggests focusing on employee engagement, as it indicates that employee engagement positively impacts innovation (Rao, 2016). Accordingly, we propose the following hypothesis:

H1: Employee engagement is positively related to innovation.

2.2 Antecedent variables

2.2.1 Organizational level

Transformational leadership

According to Bass and Riggio (2006), leadership is much more than people in positions of authority, and anyone can demonstrate leadership skills and help a business succeed. Furthermore, they emphasize the importance of people in management and leadership positions fostering and encouraging leadership in their subordinates. This theory and principles are known as transformational leadership (TL) and are based on simple principles (Bass & Riggio, 2006). This leadership theory has existed for more than four decades since Burns introduced the concept of TL theory, and the original idea behind TL theory is to motivate and improve morale among workers (Bass, 1999). TL encourages leaders to inspire and intellectually stimulate others (Bass, 1999) to inspire and motivate them to do more than they originally intended (Bass & Riggio, 2006).

In 1978, James MacGregor Burns developed and categorized leadership as neither transformational nor transactional (Burns, 1978). Employees with transactional leaders, according to Burns, are monetarily rewarded for their work and punished with no reward if they do not deliver (Bass & Riggio, 2006). This leadership style is referred to as a trade of services (Leithwood & Jantzi, 2005). On the other hand, transformational leaders strive to inspire and empower their employees to achieve great results while allowing them to develop their leadership skills (Bass & Riggio, 2006).

Podsakoff, McKenzie, Moorman, and Fetter (1990) concluded that the literature on TL could be summarized in six different behaviors. These six behaviors were defined as “*articulations of a vision, providing an appropriate model, fostering the acceptance of group goals, high-performance expectations, individualized support, and intellectual stimulation*” (p. 107). Carless, Wearing, and Mann (2000) used these six behaviors and developed a seventh behavior for their research a decade later to narrow the concept of high-performance expectations and instead focus on charisma. Their study summarized the seven behaviors of TL as one who “*communicates a vision, develops staff, provides support, empowers staff, is innovative, leads by examples, and is charismatic*” (Carless et al., 2000, p. 390).

The seven behaviors can be further explained in short: (1) *Vision* is defined by that transformational leaders have a clear vision for the organization and communicates the vision to the employees, where the purpose of the leader is to motivate and inspire the employees by expressing their vision and core principles; (2) *Staff development* is the leaders’ responsibilities to develop the skills and abilities for the employees and provide them with new challenges or opportunities; (3) *Supportive leadership* is the practice of giving employees encouragement and constructive feedback. To help the employees achieve and accomplish their goals, the leader will give them resources and support them; (4) *Empowerment* entails involving employees in decision-making and problem-solving. A transformational leader will ensure the employees that they are supporting their decisions and give them autonomy and freedom to be more creative and innovative; (5) *Innovative or Lateral thinking* refers to the willingness of leaders to take on difficult or complex challenges to accomplish the overall goal. A transformational leader also encourages the employees to take challenging opportunities; (6) *Lead by example* is vital for a leader to set an example for the employees to follow. The leaders set an example of what they expect of the employees and lead by example; (7) *Charismatic leadership* is important for a transformational leader to inspire the employee, which demonstrates that the

leaders are present and that they can engage the workforce (Carless et al., 2000, p. 390-392). Carless et al. (2000) included charisma based on Bass's (1999) concepts of TL, which includes charisma as an element and driver in the definition of TL. This paper will concentrate on the seven behaviors that Carless et al. (2000) use to explain the behaviors behind TL.

There have been many studies regarding TL and employee motivation in recent decades. Several studies show that TL significantly impacts employee performance and motivation (Andriani, Kesumawati & Kristiawan, 2018; Arman, Wardi & Evanita, 2019). This can be explained by the fact that studies show that transformational leaders inspire their followers to outperform their expectations (Bass & Riggio, 2006; Arman et al., 2019). This is likely because the employees will not feel like the leaders are taking advantage of them in any way, and they will want to reciprocate the trust according to what is expected of the employees (Arman et al., 2019). When an employee is more motivated, he or she is more likely to believe that their level of performance will improve as well. Other studies also argue that there is a positive relationship between TL and employee engagement (Arifin, Troena, Djumahir & Rahayu, 2014; Vincent-Höper, Muser & Janneck, 2012). Based on this, we decided to test the following hypothesis to understand better the potential impact of transformational leadership on motivation and employee engagement:

H2A: TL is positively related to employee engagement.

A company must develop and foster new ideas through innovation to be competitive. It is also necessary to have motivated employees and leaders who can foster innovation and motivation to become innovative. This is supported by research indicating that employee, team, and organizational creativity and innovation are strongly linked to leadership (Hughes, Lee, Tian, Newman & Legood, 2018). Gumusluoglu and Ilsev (2009) discovered that TL has a strong and positive effect on creativity both at the organizational and individual levels in a study conducted in a Turkish software company. Elkins and Keller (2003) argue that TL positively relates to work quality and project effectiveness in different organizations' research and development departments (R&D). They also discovered that the best employees in R&D departments used a more comprehensive range of influence strategies and demonstrated more transformational leadership behaviors than employees with lower performance levels.

According to Matzler, Schwarz, Deutinger, and Harms (2008), TL directly impacts growth and innovation, leading to higher profitability within companies. According to other studies, there is a significant relationship between TL and employee innovation (Khalili, 2016; Matzler et al., 2008). These findings imply that TL is a good fit for companies that want to encourage employee innovation and motivation. It is likely to believe that this is due to TL's emphasis on the intellectual stimulation of others and as the employees are expected to develop their leadership skills (Bass, 1999; Bass & Riggio, 2006).

In a study in Iraq in a higher education institution, Al-Husseini and El Beltagi (2016) found that TL directly impacted increasing innovation and product processes. A few years later, they found that TL impacted knowledge sharing and innovation within the same sector among universities in Iraq (Al-Husseini, El Beltagi & Moizer, 2021). A study conducted across several hospitals in Pakistan discovered that TL had a positive psychological effect on nurses, resulting in improved knowledge-sharing behavior and increase intrinsic motivation (Masood & Afsar, 2017). They discovered a link between TL and increased trust among employees and leaders, which is supported by the findings in the previously mentioned study by Arman et al. (2019), in which TL is explained as a driver of trust. When there is trust between these two parties, it is likely that this is a driver of innovation as well. This indicates that TL has been shown to play an important role in creating an innovative environment. Therefore, it is reasonable to expect TL to impact innovation in various sectors and organizations based on previous research.

Based on previous studies, we argue that TL can give employees the impression that there is a high level of openness to innovative thinking, which can foster new ideas and increase motivation. It is also likely to believe that this can lead to employees feeling a high level of trust in their leaders and therefore being able and encouraged to develop and think creatively. Based on these findings, we can assume a positive relationship between TL and innovation. Therefore, we suggest the following hypothesis:

H2B: *TL is positively related to innovation.*

Autonomy

Autonomy is defined as *"the degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in determining the*

procedures to be used in carrying it out" (Hackman & Oldham, 1975, p. 162). In recent years, many studies have investigated the importance of autonomy as a job characteristic concerning organizational and individual factors. There have also been conducted studies on the relationship between employee engagement and autonomy, suggesting that there is a strong link between the two variables. According to Karasek's (1979) Job Demand-Control model, autonomy is essential for employees' intrinsic motivation when working in highly demanding professions. Increased self-assurance and motivation are driven by the jobs' perceived freedom, independence, and discretion, ultimately leading to enhanced performance (Çekmecelioglu & Günsel, 2011).

According to Van der Hulst and Geurts (2001), there appeared to be a variation in employee engagement and well-being at work based on the type of job people had. The results of their research indicated that individuals who worked in positions with a high autonomy with a skill variety had a higher level of engagement at work. In contrast, persons in low-autonomy and low-skilled jobs had a low level of engagement. According to Zhou's (1998) research, an employee's work performance and development are impacted by the degree of task autonomy, which is in accordance with Van der Hulst and Geurst's findings. It is, therefore, likely to believe that job type will also affect employee engagement.

Numerous studies and theoretical frameworks have emphasized the significance of job autonomy in fostering employee engagement. To better understand this concept, it is important to distinguish between the various measurements of autonomy. De Spiegelaere, Van Gyes, and Van Hootegem (2016) conducted a study and found that autonomy in work method, work schedules, work time, and location are all positively associated with higher levels of employee engagement. However, only autonomy in the work method showed a statistically significant relationship when specifically considering employee engagement. A limited amount of research is available regarding the direct connection between the two variables. However, empirical evidence suggests that autonomy is a moderating factor in employee engagement and organizational support. This indicates that when employees have a high degree of autonomy and receive support from their superiors, it ultimately positively impacts the engagement level (Menguc, Auh, Fisher & Haddad, 2013). Based on this, we propose the following hypothesis:

H3B: Autonomy is positively related to employee engagement.

It is discovered that employees' job-related autonomy is strongly associated with their creative performance as it gives them better options for applying their work and allows them to explore ideas freely (Sia & Appu, 2015). Furthermore, several studies have examined the relationship between job characteristics and autonomy. While employees' job-related autonomy is positively related to their creative performance, it is also found that controlling the work environment will negatively influence employees' creative task performance (Oldham & Cummings, 1996). A high level of task autonomy provided to the employees by the organization will increase the development of new and original ideas in their task performance (Zhou, 1998).

In a study conducted by Sia and Appu (2015), autonomy was examined through three dimensions: work method autonomy, work schedule autonomy, and work criteria autonomy. Work schedule autonomy describes employees' ability to choose appropriate timings and durations for their work, allowing employees to control when and how long they engage in their work activities (Sia & Appu, 2015). Employees' creative performance is significantly influenced by schedule autonomy, which is positively linked with employee creativity. It suggests that employees' freedom in their work schedule contributes to their creative performance of the task, meaning that establishing work time and duration to accommodate employees' convenience could improve their creative performance. The work criteria autonomy is the ability of the employees to choose or modify the criteria used for evaluating their performance (Sia & Appu, 2015). The research illustrates a positive relationship between work criteria autonomy and employees' creative performance. Furthermore, the findings suggest that if employers allow workers to select the criteria for their task performance and evaluation, they will be able to evaluate themselves and improve their performance-related flaws.

In this study, we will be focusing on work method autonomy, which refers to the extent to which employees have the freedom to determine the strategies and approaches they use to accomplish their tasks. The findings of their study reveal a positive correlation between work method autonomy and workplace creativity. In other words, when employees have the ability to choose their own techniques and strategies, it positively influences their creative abilities. Moreover, work method autonomy allows employees the freedom to explore and try out different work procedures and methods which could encourage them to come up with innovative ideas that can be suggested and implemented at a later stage (De Spiegelaere, Van Gyes, and Van Hootegem, 2016). Based on our review on relevant literature, we find support for our hypothesis, which is as follows:

H3A: Autonomy is positively related to innovation.

Job demand

Job demands refer to *“those physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skills and are therefore associated with certain physiological and/or psychological costs”* (Bakker & Demereouti, 2007, p.113). Since job demands are those aspects of the job that require effort and, as a result, are associated with psychological and physical costs, research has revealed that job demands such as high work pressure, emotional demands, and role ambiguity may lead to exhaustion and as diminishing to health (Halbesleben & Buckley, 2004). Furthermore, there is empirical evidence revealing how job demand is related to strain, including, e.g., lack of energy and development of health problems (Bakker & Demereouti, 2007).

Karasek’s Job Demand-Control Model (JD-C) is a widely known theory that examines how job characteristics influence employees’ psychological well-being. It illustrates how high levels of job demand can cause stress and burnout for employees (Karasek, 1979). Through his research, Robert Karasek found that workers in high-demand jobs who had low autonomy experienced higher levels of stress than workers in high-demand jobs who had high levels of autonomy. Furthermore, the job strain model developed through the JD-C model states that employees working in an environment with high demand along with low control and low support faces the most significant risk of physical and mental health issues because of heavy workload demands and pressure in combination with having little to no control of handling the work situation themselves (Karasek, 1979). This theory is also supported by Demerouti, Bakker, Nachreiner & Schaufeli (2000), who found that job demand significantly impacted exhaustion and burnout’s mediating role in the relationship between working conditions and life satisfaction.

Van Yperen and Hagedoorn (2003) studied whether high job demands increase or fatigue employees’ intrinsic motivation. The findings indicated that the interaction between job demand and autonomy had no significant effect on intrinsic motivation; however, increasing job demands were accompanied by increased intrinsic motivation only when autonomy was high. This indicates that job demand will only positively affect employees when given more

freedom to control their job. Furthermore, it is found that job demands related to workload and emotional demands can have an inverse relationship with employee engagement, meaning that an increase in these demands could decrease overall engagement (Schaufeli, Shimazu, Hakanen, Salanova & De Witte, 2017). Based on relevant research on this topic, we, therefore, suggest the following hypothesis:

H4A: Job demand is negatively related to employee engagement.

As suggested and demonstrated by Bunce and West (1994), workers perceive creative activities as a practical way of dealing with job demands such as heavy workloads. In other words, it was discovered that higher levels of job demand resulted in inventive responses, demonstrating that innovative work behavior is a problem-focused coping method workers employ to deal with increased task demands (Lazarus & Folkman, 1984; Parasuraman & Hansen, 1987). Research examining the link between innovation and job demands reveals that creatively adapting to increased job demands could be seen as a specific type of problem-focused coping in work contexts (Janssen, 2000). This indicates that employees may resort to innovative solutions as a coping mechanism when they face high job demands. As a result, innovative work behavior may support the individual in enhancing his or her ability to adapt to increased job demands by creating, encouraging, and implementing ideas for improving oneself or the workplace.

H4B: Job demand is positively related to innovation.

2.3.2 Team level

Age discrimination

The global report on ageism by World Health Organization (WHO) defines ageism or age discrimination as "*the stereotypes, prejudice, and discrimination directed toward people based on their age*" (WHO, 2021, p. 15). The report identifies three dimensions of the term: institutional ageism, interpersonal ageism, and self-directed ageism. Institutional ageism refers to social norms, regulations, policies, and practices that unfairly prohibit opportunities and consistently disfavor people based on their age. While self-directed ageism happens when ageism is internalized and used against oneself, interpersonal ageism occurs through interactions between two or more people (WHO, 2021).

Age discrimination can have far-reaching consequences for an individual's economic and psychological well-being (Wood, Wilkinson & Harcourt, 2008). Palmore (2001) developed a way to measure ageism to understand how much ageism there is and how prevalent the various forms of ageism are in different societies in different groups. The survey was tested on a sample of 84 individuals between the ages of 60-93 years, where over 77% of the respondents stated that they had experienced one or more incidents of age discrimination. The study also revealed that experiences of age discrimination occurred more often to those with less education than the ones with a higher level of education, and there was no evidence proving that discrimination towards age is related to gender.

Age-related stigmatization in the workplace is suggested to impact employees' engagement and organizational performance due to widespread beliefs of older workers as planning to retire, quitting their jobs, and identifying as late-career workers (Levy & MacDonald, 2016). Another research by MacDonald and Levy (2016) on ageism in the workplace revealed that increased job satisfaction, commitment, and engagement at work were related to psychosocial factors such as age identity. Age identity can be categorized into five dimensions: subjective age, others' view of one's age, desired age, desired longevity, and perceived old age (Kaufman & Elder Jr., 2002).

Bayl-Smith and Griffin (2014) conducted a study in which they found that perceiving age discrimination had a greater negative impact on how engaged they were engaged in their work when individuals identify with their job but do not feel a deep emotional connection to it. Furthermore; they found that when individuals were highly engaged in their work, age discrimination had less influence on their decision about retirement.

Furunes & Mykletun (2010) argue that discrimination is more likely to make one develop the feeling of disconnection from others and feeling less capable because age-related discrimination in the workplace ruins the options of having at least two groups of basic needs satisfied concerning work, such as competence and relatedness. Given that discrimination usually emerges because of characteristics that one cannot change, like one's gender or age, it can cause one to feel both threatened and excluded (Furunes & Mykletun, 2010) which could be a risk to one's mental health. Based on relevant literature, we hypothesized that:

H5A: Age discrimination is negatively related to employee engagement.

The idea that older workers are less innovative and more resistant to change is one of the more persistent and unfavorable stereotypes associated with age. Negative age stereotypes contribute to the idea that long-tenured employees are less innovative and more resistant to change because older workers are more likely to have longer organizational tenure (Ng & Feldman, 2013). There seems to be a lack of research regarding the relationship between innovation (or innovative work behavior) and age discrimination. However, research by Ng & Feldman (2013) proves that the negative stereotype about older and longer-tenured workers being less innovative is not based on accumulated evidence and that excluding older workers from innovation-related tasks could be both disadvantageous and harmful. We, therefore, hypothesize the following:

H5B: *Age discrimination is negatively related to innovation.*

Innovation climate

Innovation climate is mentioned as a crucial pre-requisite for innovation performance in organizations (Popa, Soto-Acosta & Martinez-Conesa, 2017), and it is important for organizations to foster an innovative climate and environment to stay competitive in today's market. The term is further explained by Martín-de Castro, Delgado-Verde, Navas-López, and Cruz-González (2013) that innovation culture is built on "*values, beliefs, and assumptions that are shared by the people of the organization*" (p. 353). However, the term innovation climate is quite a wide concept with different definitions (Afsar and Umrani, 2020; Newman, Round, Wang & Mount, 2020), with little prior literature and research. In previous studies, the term has been referred to as "innovation climate," "climate for innovation," and "innovation-supportive climate." However, according to Newman et al. (2020), all these terms share the same concept, which is "*employees' impression of how much the team or organizational environment encourages innovation and the employees' innovative behavior*" (p. 77). In this study we therefore use the concept of innovation climate.

Afsar and Umrani (2020) explain in their study that "*employees' engagement in innovative work behavior will vary depending on the leader's influence over the employee, the motivational level to learn, and the complexity of work tasks and the innovation climate*" (p. 404). Another study found that employee engagement and the level of performance was stronger when the innovative climate was high (Garcia-Buades, Martinez-Tur, Ortiz-Bonnin & Peiro, 2016). It is, therefore, reasonable to assume that several factors will be important in determining how

positively the innovative climate will affect employee engagement. However, studies show that there is a relationship between innovation climate and employee engagement. Thus, we postulate the following hypothesis:

H6A: Innovation climate is positively related to employee engagement.

A previous study discovered that team creativity only improved innovation when the climate for team innovation was high (Somech & Drach-Zahavy, 2013). This is consistent with Kang, Solomon, and Choi (2015) findings, who discovered that an innovation climate encouraged employees to act innovatively by increasing their passion for invention. The relationship between innovative climate and employee innovation strengthens as the innovative climate increases. Yeoh and Mahmood (2013) conducted a study amongst knowledge-intensive business services in Malaysia. They found that an innovation climate improved innovative work behavior by increasing the employees' willingness to foster new ideas and to seize new possibilities. By looking at previous research, it seems to be a relationship between innovation climate and the innovative level in an organization, and studies show that when there is a high climate for innovation. Furthermore, this seems to positively impact innovation at the individual level. We, therefore, believe that the innovative climate would influence and promote innovation in organizations, and the following hypothesis will be investigated:

H6B: Innovation climate is positively related to innovation.

2.3.3 Individual level

Stress-level

Stress can be defined as "the emotional and physiological reactions to stressors," whereas stressors can be described as a demand, situation, or circumstance that disrupts a person's equilibrium and initiates the stress response (Zastrow, 1984). Stress can occur to workers across occupations. However, some workers may have a higher risk of experiencing high levels of stress and burnout. Lloyd, King & Chenoweth (2002) identified social work as a profession at high risk of stress and burnout. Furthermore, organizational factors such as work pressure, workload, role ambiguity, and relationship with the supervisor were primary predictors for workers to develop a high-stress level and burnout. Risk factors associated with burnout appeared to include the lack of challenge on the job, low work autonomy, role ambiguity,

difficulties in providing services to clients, and low professional self-esteem (Lloyd et al., 2009).

Another research by Chan, Lai, Ko, and Boey (2000), focusing on work stress among six professional groups, suggests five major sources of work stress among professionals and categorized them as 1) the nature of the job, 2) interpersonal relations at the workplace, 3) the work organization, 4) work-family conflicts, and 5) the profession itself. The empirical evidence from their study showed performance pressure and work-family conflicts to be the most stressful aspects of work, whereas performance pressure had the strongest relationship with job satisfaction and mental health among professions fully embedded in the bureaucratic systems.

As stress is not only affecting people's physical and mental health but also a serious concern for organizations because of the risk of financial losses it may cause, it has become an important issue to address. While stress might function as a motivator for workers at some level, if the causes of stress are not properly addressed, the result could lead to organizational stress. Work stress exists in every organization, regardless of the size, because the complexity involved can substantially impact the emotional state and health of employees (Winasis, Wildan & Sutawidjaya, 2020). Many researchers have studied the topic of the relationship between work stress and employee engagement in recent years, and empirical evidence supports that, in general, work stress does harm employee engagement (Anthony-McMann, Ellinger, Astakhova & Halbesleben, 2017; Karatepe, Yavaş, Babakus & Deitz, 2018; Winasis et al., 2020; Schaufeli et al., 2017). Following the relevant theory, we propose the hypothesis:

H7A: Stress level is negatively related to employee engagement.

As workers' physical and mental health continues to be an important topic, it is critical to understand how this could affect the ability to innovate in organizations. The relationship between work-related stress and innovation can be complicated and diverse. Innovation has the potential to lessen job stress because new and creative ideas could help improve processes, products, or services in the organization that make job tasks easier and/or more efficient for the employees. On the other hand, innovation often involves change, uncertainty, and risk-taking that can be stressful and challenging for some individuals. However, it could also lead to higher stress-level if the process is not implemented accordingly.

Research has yet to conclude whether work-related stress has a positive or negative effect on employees' innovative abilities, and there have not been enough studies and empirical evidence to presume the outcome. Saleem, Tufail, Atta, and Asghar (2015) researched innovative workplace behavior and perceived stress among healthcare employees, and results indicated a negative relationship between the two variables. High stress levels decreased employee performance and innovative workplace behavior (Saleem et al., 2015).

H7B: *Stress-level is negatively related to innovation.*

Work-life balance

Finding a balance between work and life can be challenging for many people. Your job typically requires some time of your day, as does your family, friends, and other responsibilities or activities. According to literature, the term "work-life balance" has a variety of meanings for different people, and there seems to not be a clear, agreed-upon definition for it (Kalliath & Brough, 2008; Lockwood, 2003). This is probably because different people lead diverse lives; some do not have their own families but instead devote their free time to things other than employment, such as sports, hobbies, and studies. According to research, an imbalance between work and personal life causes more stress (Jaharuddin & Zainol, 2019), and stress at work can lead to higher turnover (Arshadi & Damiri, 2013). Therefore, maintaining a healthy work-life balance is crucial for employees and organizations. This may explain why the term work-life balance researched the topic and why it seems more important than ever. There may be various causes for this, including the values and lifestyle of the younger generations and the ease with which technology makes flexible working possible.

Lockwood (2003) defines work-life balance from the employee's point of view as "*the dilemma of managing work obligations and personal/family responsibilities*" (p. 3) and from the organization's point of view as "*the challenge of creating a supportive company culture where employees can focus on their jobs while at work*" (p. 3). Overall, most of the definitions breaks down to the individual's ability to manage responsibilities at home as well as at work. The term "work-family balance" is also frequently used. However, organizations later adopt and use work-life balance to encompass employees who do not have their own families but seek to balance other non-work interests, according to Kalliath and Brough's (2008) research.

According to Pandita and Singhal (2017), there was a shift in Generation Y. This generation was generally more interested in work-life balance than previous generations. Organizations today strive to develop a workplace environment suitable for experiencing work-life balance. In most job ads, it is advertised that you can work from home and adapt the work around your family's schedule. Work-life balance is influenced by several factors, including job demands, individual characteristics, family responsibilities, and workplace culture (Kalliath & Brough, 2008). According to Kalliath and Brough (2008), organizations can support work-life balance in some way, such as by encouraging work-life balance policies and flexible working hours. Employees would likely experience less stress and be more engaged when they have a healthy balance between work and their personal lives. Literature proves a positive relationship between work-life balance and employee engagement (Wasay, 2013; Pandita & Sanghal, 2017; Dinh, 2020; Wood, Oh, Park & Kim, 2020). According to Wood et al. (2020), enhancing work-life balance may benefit both the employee and the organization, as the organization will gain from the employee's increased motivation and engagement at work.

The study by Pandita and Sanghal (2017) investigated the connection between work-life balance and employee engagement in the Indian IT industry. The results showed that various variables, including age, gender, and marital status, affected work-life balance. This is likely because various life circumstances will affect work-life balance. In Malaysia, Jaharuddin and Zainol (2019) conducted a study in various industries, including banking, insurance, and hotels. In this study, employee engagement was positively correlated with work-life balance, and engaged workers reported reduced intentions of quitting their jobs. Thus, from a cost perspective, it is advantageous for the organizations, where a good work-life balance can lower turnover. Research shows that people with a good balance between work and non-work activities are more engaged, as work-life balance is affected by various factors in work life and personal life. Based on this, we have decided to investigate the following hypothesis:

H8A: Work-life balance is positively related to employee engagement.

A study by Huang, Chen, and Wang (2020) investigated the relationship between work-life balance and innovative behavior among workers born after 1990 in three cities in China. The results showed that more innovative behavior was encouraged when people had a good work-life balance. This is in accordance with the study by Pandita and Sanghal (2017), which showed

that younger generations emphasize work-life balance and are more appreciative of it. According to a study among entrepreneurs, work-life balance was crucial in mediating the relationship between innovation and job satisfaction (Jensen, Liu & Schøtt, 2017). However, there does not appear to have been much prior research on the relationship between work-life balance and innovation, based on a literature review. Although, research indicates that stress can be reduced when an employee can find a balance between work and personal life (Jaharuddin & Zainol, 2019). Therefore, it is reasonable to assume that work-life balance is important because high-stress levels can negatively impact organizational innovative work behavior (Saleem et al., 2015). Based on this, we propose the following hypothesis:

H8B: *Work-life balance is positively related to innovation.*

Weekly working hours

Weekly working hours are important to consider regarding its relationship to employee engagement and innovation. There is a broad spectrum of research on the impact of work hours on employee engagement. A study by Amabile & Kramer (2011) found that employees who work long hours are less likely to be innovative and creative. This could be because employees who work longer could be more stressed and likely tired of the long days. According to Grawitch, Barber, and Kruger (2010), employees who put in many overtime hours often have issues or conflicts with their families outside of work, which affects their level of involvement and engagement at work. This demonstrates that numerous variables could affect employee engagement, with work hours being one of many that may have a negative impact.

A hospital study of nurses found that nurses usually worked overtime due to a heavy workload. Mandatory overtime labor had a negative effect on mental health and employee engagement, according to the findings in the study (Watanabe & Yamauchi, 2018). Overtime hours had a beneficial effect on well-being when it was voluntary and chosen by the employees themselves. This could be in conjunction with the fact that it may be easier to work additional hours or overtime when you choose it yourself than when you feel obliged to do so by your employer. According to the study by Van der Hulst and Geurts (2001), only a few hours of unscheduled overtime were linked to poor mental health. It is, therefore, reasonable to believe that work hours will have an impact on employee engagement since research has shown that long work

hours can result in job stress and that work stress harms employee engagement (Anthony-McMann et al., 2017; Karatepe et al., 2018; Winasis et al., 2020). We therefore hypothesize:

H9A: Weekly working hours are positively related to employee engagement.

According to Amabile and Kramer (2011), providing employees with more autonomy over their work schedule will encourage an innovative and creative work environment. They explain that more control over work hours might lead to increased motivation and productivity, which creates an environment to develop new ideas for the individual employee. This is also following Sonnentag and Bayer's (2005) study, where they imply that people who cannot focus on work when they have time off are more likely to have greater well-being and are more likely to become more innovative at the workplace.

In a study by Janssen in 2004, he identified the detrimental impacts of long work hours on creativity and the possible advantages of leisure activities in reversing these effects. Janssen argues that organizations should encourage a healthy work-life balance to foster innovative and creative thinking. Numerous other factors can affect an employee's level of innovation, but research suggests that the number of hours worked may have an impact. However, it is debatable if working longer hours makes it easier to put work aside when you have time off or whether the converse is true. Research shows that high stress level impacts innovative work behavior negatively (Saleem et al., 2015). We, therefore, believe that the amount of work hours will affect the innovative level of the individual employees. In light of relevant theory on this topic, we suggest the following hypothesis:

H9B: Weekly working hours is positively related to innovation.

Gender

Gender is, according to the literature, a topic of interest for researchers. Schaufeli (2018) argues that the happiest countries in the world were those that could boast of gender equality and human rights and that those countries without gender inequality had higher levels of employee engagement. A study by Adams and Ferreira (2009) found that having more women on corporate boards of directors improved the performance of organizations, as few women held corporate board seats in 2007. Also, it has been argued that a gender-varied workforce can

contribute to new and different perspectives to the organization and that gender-balanced teams outperform those with a male preponderance (Hoogendoorn, Oosterbeek & Van Praag, 2013), and more innovative ideas may occur from improved performance and new perspectives.

A study conducted in 2013 by Banihani, Lewis, and Syed examined whether gender affects employee engagement. The authors found that it was easier for males than women to demonstrate employee engagement, and therefore they concluded that employee engagement is gendered. According to Banihani et al. (2013), autonomy and task significance impacted employee engagement among male workers. Employee engagement was impacted for women by the importance of task significance and social support. This suggests that based on what engages gender differently, there may be gender disparities in employee engagement. Both men and women are susceptible to different types of engagement.

There appear to be differences between gender and employee engagement in the literature. It was explored in a study by Shukla, Adhikari, and Sing (2015) how factors including age, gender, and education were related to employee engagement. They found that compared to men, women were more engaged in their work. They also discovered that employee personalities, which gender preferences and values could explain, account for roughly 25% of employee engagement. Schaufeli, Shimazu, Hakanen, Salanov, and De Witte (2019) also discovered that women were marginally more engaged than men in their study. They also explain demographic differences, pointing out that women in Europe are found to be less engaged than men. However, there were no gender differences in Canada and Australia and increased engagement among women in South Africa and Spain. In addition, it was found in a study of managers in several Indian industries that factors like gender, age, and education affected employee engagement (Dhir & Shukla, 2018). In this study, men were found to be more engaged than women.

There appear to be various outcomes and findings in the studies. Based on the demographics, the type of profession you have, and the diverse needs that genders and people have, it is possible that this will differ from person to person. Based on this, we want to investigate whether there is a higher level of employee engagement amongst men, as some research suggests. Thus, we hypothesize:

H10A: There will be a higher employee engagement level among men than women.

Foss, Woll & Moilanen (2013) used data from a Norwegian energy corporation survey to examine if gender does matter in the generation and implementation of new ideas and innovation. While men and women are considered to be equally innovative in organizational settings, the study revealed that men's ideas and innovation tend to be more encouraged and implemented than women's because women's ideas are impeded by the lack of collegial support (Foss et al., 2013; Poutanen & Kovalainen, 2013).

According to McGowan, Redeker, Cooper, and Greenan (2012) on women's representation in leadership roles, women's ideas are infrequently implemented because they are perceived as inferior to men's ideas due to a misconception about women's ability to innovate. Despite showing high levels of dedication and enthusiasm in many aspects of their work, many women reported that they experienced a feeling of being under-represented and unheard in comparison to men in similar roles (McGowan et al., 2012). Thus, it is organizational factors that hinder or prevent women's innovative behavior and not women who lack innovation capability (Alsos, Hytti & Ljunggren, 2013).

Koffi (2021) analyzed the recognition of women's innovative ideas and found that family situations, risk aversion, competitiveness, and discriminatory factors often explain gender gaps when analyzing underrepresentation in male-dominant industries. In addition, it is suggested that the lack of recognition of women's work is why women do not engage in innovative behaviors and face a lower entry and a higher exit rate than men (Koffi, 2021). This theory is supported by Luksyte, Unsworth, and Avery (2018) and Nählinder (2010), that men are expected to be more innovative than women, and their ideas will therefore not be rewarded and recognized equally as the ones displayed by men. With these findings, we therefore hypothesize that:

H10B: Men will have a higher perceived innovation capability level than women.

Age

When using age as a factor in studies, researchers often use chronological age to understand better how workers in different age groups function in organizations. Existing studies use

chronological age to examine the effect of chronological-age diversity (i.e., the distribution of employees' ages in the organization), while other researchers see this as a neglect of potential multidimensional perspective on age diversity in organizations (Kunze, Boehm & Bruch, 2021). Recent organizational level analysis has found that employees' average subjective perceptions of age, or how old employees perceive themselves to be independent of their chronological age, matter for their behavior and that, ultimately, subjectively younger employees display higher performance levels (Kunze et al., 2015). However, in this study, chronological age has been purposely used as a predictor since it is an organizational measure of the working lifespan that ranges from the earliest working age to retirement age. Since chronological age gives an objective measure of an individual's age that is less prone to unpredictability than subjective perceptions of age, using chronological age to evaluate employee engagement and innovation is believed to be more suitable in this matter. Moreover, chronological age offers a more accurate and reliable way to determine a person's age, and it allows evaluating how age-related factors, including cognitive abilities, physical well-being, and job-related skills, change as we age.

Many employers nowadays tend to seek younger workers rather than older workers when hiring due to the negative perceptions about older employees being less engaged in work, less willing to adapt to new technology, and at risk of deteriorating health issues (Korsakienė, Raišienė, Bužavaitė, 2017). While younger workers may be more likely to be highly engaged at work because of their excitement, enthusiasm, and desire to develop their careers, there are studies suggesting that older workers may be equally, if not more, involved because of their overall human capital contribution is more remarkable than younger workers (Peterson & Spiker, 2005). Statistics have indicated that the level of engagement does not necessarily decrease with age, dispelling the misconception that older workers are less engaged in their work (Johnson, Machowski, Holdsworth, Kern & Zapf, 2017; Kim & Kang, 2016). Older workers have a better intrinsic motivation to work because of their stronger professional identity, and as a result, they have more resources available to deal with demanding work situations (Kim & Kang, 2016). According to the study's findings, age had significant positive relationships with emotion control and career identity, which help individuals have more resources in their later years or careers. This finding corresponds with a lifespan perspective. As a result of these resources, older people are suggested to be more engaged at work, mediating the positive relationship.

Another study conducted by James, McKechnie, and Swanberg (2011), which is one of few studies that have a sufficient sample of workers over the age of 55 and over 65 to assess differences in employee engagement across the working lifespan, found evidence that supports the idea of older workers being more engaged in work than younger workers. One explanation for this might be that while younger generations are less willing to stay in the same organization and have lower organizational commitment, older workers are more likely to believe in a psychological contract in which loyalty to the organization and hard work is rewarded with security and gradual pay increases (D'Amato & Herzfeldt, 2008). Younger employees might be more eager to leave the company if a good opportunity presents itself or more willing to do so if their current employer does not address their requirements. Based on these findings, our hypothesis is the following:

H11A: Age is positively related to employee engagement.

While it is believed that older workers may be less likely to adopt new technologies or use new ways of performing their tasks, which could limit their ability to innovate, this group of workers may also bring valuable knowledge, skills, and experience that may contribute positively to innovation. There is evidence in the literature indicating that an employee's age is negatively related to an organization's innovativeness, which has been explained by the fact that older workers tend to have a less conceptual understanding of technology and may be more resistant to change (Schubert & Andersson, 2014; Bertschek & Meyer, 2010). However, there are also findings suggesting otherwise, and the effects of age on innovation-related behavior remain debatable. Although there continues to be a negative stereotype about older workers being less innovative, there is evidence suggesting that older workers do not engage in less innovation-related behavior than younger workers and that the quality of invention does not necessarily decrease at older ages (Ng & Feldman, 2013; Frosch, 2011). We therefore hypothesize:

H11B: Age is positively related to innovation.

3.0 Research Method

This chapter provides an extensive and methodical framework that will lead to an empirical answer to the research questions. The research methodology will determine the specific analyses used to construct the study.

3.1 Quantitative method

The two primary research methodologies are quantitative and qualitative. One advantage of the quantitative method is that it offers factual and reliable data and fosters a deeper understanding of the information (Steckler, McLeroy, Goodman, Bird & McCorminck, 1992; Blackstone, 2018). On the other hand, a qualitative method provides rich and in-depth information and data (Steckler et al., 1992; Blackstone, 2018). These two research methods allow information to be gathered and applied in various ways. Field research, focus groups, and in-depth interviews are typical examples of qualitative methods. Survey research is the most used method to represent data for quantitative methods (Blackstone, 2018). According to the literature, quantitative methods provide deeper breadth but less depth, and the primary use is frequently to test theoretical theories (Blackstone, 2018). Moreover, the quantitative approach emphasizes objectivity and is suitable to use when it is possible to gather measurable as when it is possible to collect quantifiable measures of variables (Queirós, Faria & Almeida, 2017).

The quantity of data that can be gathered is one of the primary benefits of adopting a quantitative research method. In many instances, the data could reflect a bigger population and can be examined using statistical tools. It will also emphasize objectivity in data collection and analysis. Compared to a qualitative research approach, quantitative research uses numeric data, which may result in more accurate findings. Moreover, a quantitative research approach will improve description, validation, and data prediction. In order to get a precise understanding and answer to our research questions, we will adopt a quantitative research method in this study. Although, it is essential to acknowledge that, on a certain level, quantitative and qualitative data are practically inseparable. To do good research, one could use the methods separately and jointly (Ochieng, 2009).

3.2 Sample and data

The data used in this study is collected by Norstat Norway (Norstat), one of Europe's leading data collectors for market research. Norstat used an electronic questionnaire sampling 1531

respondents from their panel of 8500 active participants. The respondents were made sure about the purpose of the study and that the data would only be used for educational research. At the same time, any concerns regarding the survey could be directed to the project leader. Further, anonymity was assured through a process where Norstat was granted access to the respondents' identity for potential follow-up studies; however, the information processed by Norstat will never be shared with a third party without explicit consent in advance. Norstat complies with Esomar International Code on Market, Opinion, and Social Research and Data Analytics and is certified on ISO9001:2015, which is an international Quality Management System standard (norsatgroup.com). Furthermore, Norstat acts under General Data Protection Regulation (GDPR) and Norwegian laws and regulations for data protection. The Norwegian Centre for Research Data did not comment on the usage of the data.

Surveys are regularly used in social science research with a quantitative approach. Using surveys allows for obtaining information that reflects the opinions, perceptions, and actions of a group or individual to learn more about a specific topic at a low cost and is also great for representing a large part of the population (Queirós et al., 2017). However, the limitations are that the answers depend highly on the survey structure and how accurately the respondents understand and answer the questions.

3.3 Measurements for reliability and validity

The concepts of reliability and validity are important in research and are two fundamental components in evaluating a measurement instrument (Tavakol & Dennick, 2011). Roberts and Priest (2006) describe reliability and validity as ways to demonstrate and communicate the thoroughness of the research procedures and the authenticity of the results or findings. Furthermore, Fitzner (2007) explains that reliability indicates something that is possible to measure consistently, and that validity is the state in which the object is being measured correctly. According to the literature, there are many ways to test for reliability and validity (Fitzner, 2007; Bannigan & Watson, 2009). Moreover, it is important to consider that a study's credibility is normally influenced by a variety of elements, such as research questions, data collection methods, analysis, and the findings in the studies (Roberts & Priest, 2006). One of the most used reliability indicators in research is Cronbach's alpha, which helps researchers ensure that their measurement tools are consistent and reliable (Tavakol & Dennick, 2011).

Research uses the concept of "validity" differently, and there are many ways to test validity. Fitzner (2007) states that there usually are seven different types of validity that are frequently used. As there are numerous ways to test validity, McDowell and Newell (2016) recommended almost three decades ago that "a variety of approaches should be used in testing any index, rather than relying on a single validation procedure" (p. 37). Two common types of validity are frequently used in literature, which are internal validity and external validity. McKay (2008) explains that internal validity is about finding if changes in a dependent variable are caused by changes in an independent variable. Furthermore, McKay describes that external validity is about the generalizability of the results and whether it could be applied to various populations and environments. Additionally, the concept of face validity is the easiest to use; it refers to the researcher's qualitative assessment of a question or a scale. The data used for this study are collected with established scales that have previously been tested and applied in several studies, thus increasing the likelihood that they are valid in this respect.

In this thesis, we will use factor analysis to investigate the scale's internal consistency. A factor analysis will provide strong evidence of the scale's validity and reliability and helps to identify underlying concepts that are difficult to measure directly. Furthermore, Cronbach's alpha will be used to measure the reliability of the data.

3.4 Statistical tool and analysis

We have selected a range of statistical methods for the analysis in our study, using Statistical Package for Social Sciences (SPSS-Statistics) version 28 for this purpose. Both the dependent variable's and independent variables' frequencies and descriptive data are calculated in the first step. This provided a more detailed overview of the variables because it provided information about the mean, standard deviation, kurtosis, and skewness. Secondly, we conducted reliability and validity tests. First, we used Cronbach's Alpha to assess the reliability before conducting a factor analysis to clarify the variation explained and investigate the scale's internal consistency. The questions included in each factor were suited for factor analysis as deemed from the KMO values being higher than .600. Moreover, the explained variance for each factor was acceptable as a representation of a hypothetical underlying construct. The factors' validity and reliability could be presumed sufficient for future analysis if combined with a respectable Cronbach's Alpha coefficient. Moving on, we used Pearson's bivariate correlation to measure the robustness of a relationship between two variables at once. This measurement will help us determine which

variables are significantly correlated and whether these correlations are positive or negative. Ultimately, we ran multiple hierarchical regressions to differentiate between the levels (organizational, team, and individual).

3.5 Variable scale

3.5.1 Dependent variable scale

The dependent variables in this study are employee engagement and innovation. This section contains descriptions of the measurement and scaling of the dependent variables before moving on to the independent variables.

Employee engagement

The scale for measuring employee engagement is based on the 2019 study “An Ultra-Short Measure for Work Engagement” by Schaufeli et al. The study introduced a 3-item version of the Utrecht Work Engagement Scale (UWES), originally a 17-item self-report questionnaire with three dimensions: vigor, dedication, and absorption (Schaufeli et al., 2019). This scale contains three items representing each of the dimensions and is measured on a 1-5 scale, ranging from “Strongly disagree” (1) to “Highly agreed” (5). The item representing vigor is about being enthusiastic about work, while dedication is about getting consumed by work. Lastly, the absorption item is about whether employees receive much energy from working. In this study, we used the items translated from English to Norwegian by our thesis supervisor, Reidar Mykletun, for empirical research.

The descriptive data for employee engagement show a mean sum score of 3.38 and a standard deviation of .87. The reliability test resulted in a Cronbach’s alpha of .80 which is considered good; hence the scales for work engagement are reliable. Furthermore, the factor analysis for this dependent variable shows that most of the variability in the data is explained by factor one, explaining 72,3% of the total scale. The factor loadings range from .81 to .90, indicating sufficient validity as all items loaded on only one factor. The factor analysis's KMO (Kaiser-Meyer-Olkin)-value is .68, which is an appropriate threshold for this kind of analysis.

Innovation

The source of scale for innovation and creativity is derived from two studies: the first, titled "Job Demands, perceptions of-reward Fairness, and innovative work behavior" by Janssen

(2001), and the second, titled "Joint Impact of Interdependence and Group diversity on innovation" by Van der Vegt & Janssen (2003). The scale consists of 9 items, measured on a 1-5 scale, ranging from "strongly disagree" (1) to "highly agreed" (5). The descriptive data for innovation show a mean sum score of 3.22 and a standard derivation of .75. Furthermore, Cronbach's alpha resulted in a score of .93, which are an acceptable value of alpha if it is between .70 and .95 (Tavakol & Dennick, 2011). If the alpha coefficient is close to 1, it could suggest that some items are redundant (Tavakol & Dennick, 2011), meaning they are measuring the same things. The factor analysis for this variable gave one factor, explaining 65.1% of the total scale. All factors are loaded on one factor, and the factor loadings range from .71 to .86, showing sufficient validity. The factor analysis's KMO-value is .93, which is considered very good for this kind of analysis.

3.5.2 Independent variable scale

Independent variables are variables that are expected to affect the dependent variables. The variables we have chosen are transformational leadership, autonomy, job demand, age discrimination, innovation climate, stress-level, work hours, work-life balance, age, and gender. This analysis will include these variables to be tested with the dependent variables, employee engagement and innovation in organizations.

Transformational leadership

TL was measured by Carless, Wearing, and Mann (2000). The scale has seven items and five possible response options, ranging from one to five, where (1) is "Very rarely" or "Never", and (5) is "Very often" or "Always". One of the questions from the scale is, "My leader challenges presumptions and encourages innovative ways of approaching problems." The mean sum score for TL was 3.49. The reliability test indicates a Cronbach alpha score of .95 which is a high but acceptable value, indicating that the items are consistent. The factor analysis shows that all items are loaded on one factor, which explains 76.83% of the variance. The factor loadings range from .69 to .83, which is considered reliable and valid. The factor analysis's KMO-value is .94, which is considered very good for this kind of analysis.

Autonomy

Autonomy was measured by a scale from QPS-Nordic-AAW (Pahkin et al., 2008) and consisted of eight items. There are two subscales: one assesses work methods, and the other assesses

freedom in one's working hours and place. In this thesis, we have chosen the first scale that measures autonomy related to work methods, which consists of 4 items. The scale is measured from 1-5, where the lowest score is “Strongly disagree” and the highest is “Highly agreed.” The questions are about whether employees’ impact how they perform their tasks or allocate their time and if they have any decision-making power on important decisions.

The mean sum score for autonomy was 3.02. The reliability test shows a Cronbach’s Alpha of .76, meaning the autonomy scale is reliable. The factor analysis shows all items loaded on one factor, which explains 58.31% of the variance. The factor loading ranges from .76 to .79. In conclusion, this scale is considered valid and reliable. The factor analysis's KMO value is .75, which is an appropriate threshold for this kind of analysis.

Job demand

The scale for job demand has 13 items in total and is retrieved from two sources. The first scale is measured by QPS-Nordic-AAW (Pahkin et al., 2008) and is responsible for 10 of 13 items. The other source of scale for job demand is from research by Notelaers, De Witte, Van Veldhoven, and Vermunt (2007) named “The short inventory to monitor psychosocial hazards (SIMPH),” and from this source are 3 of the items. All 13 items are measured on a 1-5 scale, ranging from “Seldom or never” (1) to “Very often or always” (5). The factor analysis on job demand revealed that, contrary to the other scales, job demand consists of 4 factors/components. The factor analysis's KMO-value is .84, which is considered very good for this kind of analysis.

Factor 1 has been categorized as “Emotional job demands” and contains three items. The items in this scale target questions about job demand connected to employees’ feelings and how this affects them at work. The Cronbach’s Alpha of emotional job demand is .88, indicating that the items have a relatively high internal consistency. This factor accounted for 19.57% of the total variance.

The second factor is “Workload job demands,” which is about the amount of work. One of the three items included in the scale is: “Is your workload unbalanced causing work to pile up?”. The Cronbach’s Alpha of factor 2 is found to be .77, which is an acceptable value. This factor accounted for 17.66% of the total variance.

Factor 3 is identified as “Skills job demand” and consists of 3 items. The Cronbach’s Alpha is .64, which is the lowest value so far, suggesting that the items may not be measuring the same underlying construct. This factor accounted for 14.43 % of the total variance.

The last factor is categorized as “Special competence job demand” and consists of 4 items. The items in this scale focus on job demand that requires special competence and decision-making. One of the items states: “Do your work require your maximum attention?” and “Do your work require you to make complicated decisions?”. Like factor 3, Cronbach’s Alpha here is .66, which is also below what is considered a good score, indicating that the items do not measure the same characteristics. However, it indicates an acceptable level of reliability. This factor accounted for 14.41 % of the total variance.

Age discrimination

Age discrimination was initially measured by a scale from QPS-Nordic-AAW (Pahkin et al., 2008). However, in this thesis, we have used the Norwegian version, which was validated by Furunes & Mykletun (2010). The scale consists of 6 items, also measured on a scale ranging from 1-5, with (1) being the lowest and (5) the highest. The scale aims to determine whether there is a work climate that discriminates against older people. It seeks to understand if, e.g., older workers get involved or are treated the same as younger workers.

The factor analysis shows that most of the variability in the data is explained by factor one, explaining 55,84% of the total scale. The scale has a Cronbach alpha of .84, and the factor loadings range from .64 to .85. Since all items are loaded on only one factor, the scale has sufficient validity. The factor analysis's KMO-value is .86, which is considered very good for this kind of analysis.

Innovation climate

Innovation climate was measured by Patterson et al. (2005) and consisted of six items. The scale is measured from 1-5, where the lowest score is “strongly disagree,” and the highest is “highly agreed.” The questions are whether new ideas are accepted at the workplace if it is easy to develop nye ideas, and if the organization adapts to new changes or ideas well. The mean sum score for innovation climate was 3.44, and the standard deviation was .87. Furthermore, a factor analysis was conducted to test the reliability and validity. The reliability test gives a

Cronbach alpha of .89 and indicates an acceptable value. The factor analysis also shows that all items are loaded on one factor, which explains 63.87% of the variance. The factor loading ranges from .76 to .85, which is considered reliable and valid. The factor analysis's KMO-value is .93, which is considered very good for this kind of analysis.

Stress-level

Stress-level is measured using two scales. The first one is from QPS-Nordic-AAW (Pahkin et al., 2008), which contains one item. The second is from research "Perceived stress scale" by Cohen & Williamson (1988), containing two items. Both are measured on a 1-5 scale, ranging from "Not at all" (1) to "Very often/A lot" (5). The scale aims to cover employees feeling of stress related to work and to which extent they feel they can control it.

The mean sum score for stress-level is shown to be 2.37, which is by far the lowest mean value compared to all dependent and independent variables that have been presented. The standard deviation is .89. The scale has a Cronbach's Alpha of .83, relatively high compared to the other scales but good. Furthermore, the factor analysis for stress-level reveals that most of the variability is explained by the first component, which is 74,5%. The factor loadings range from .80 to .89. This concludes with good reliability and sufficient validity.

Work-life balance

Work-life balance consists of two scales, although they were applied here as one scale represented by one sum score. The first consists of two items, measured by Pahkin et al. (2008), and the second is measured by Dalen and Bye (2020). The items are measured on a scale ranging from 1-5, where (1) is very rarely or never and (5) is very often or always. The first scale aims to cover if the workload seems to disturb non-work activities or if the non-work life or family life disturbs the work. The second scale covers if the employees often use their free time to check on work or if they are contacted by work-related things in their free time.

The mean sum score for work-life balance is 2.41, which is lower than the previous variables, and the standard deviation is .82. The scale has a Cronbach alpha of .72, which also is acceptable, but lower than the previous independent variables. Furthermore, the factor analysis for work-life balance showed that all items loaded on one factor, which explains 76.83%. The factor loadings range from .83 to .91, which concludes with good reliability and sufficient

validity. The factor analysis's KMO value is .71, which is an appropriate threshold for this kind of analysis.

Weekly work hours, gender, age

For the independent variables working hours, gender, and age, there was only one item with one question for each variable. For age, the participant wrote down their age, and for gender, they answered male or female. Due to the reason that there only is one item per variable, and as they do not come from a scale, there is no Cronbach alpha from these variables. The mean value for age is 45.6 years, while the average weekly working hours are 37.9. The gender distribution is 55% for men and 45% for women.

4.0 Results

This chapter aims to present the statistical analyses, and results from the data explained in the previous chapter. The results will be introduced using a correlation table and multiple regressions, and the object is to further discuss our analytical findings.

4.1 Correlation analysis

The correlation for each variable is presented in Table 2. A correlation analysis is useful for understanding the strength of a relation between two quantitative variables. The correlation coefficient value ranges from -1 to +1, where a value of +1 indicates that the two variables are perfectly related positively, and a value of -1 means that they are related negatively (Gogtay & Thatte, 2017). The correlation coefficient for all the variables can be seen in Table 2, presented as Pearson's correlation matrix. The aim is to investigate the relationship between the chosen independent variables and their relationship with the two dependent variables, employee engagement and innovation.

The correlation table shows a positive and significant correlation between employee engagement and innovation, meaning that high levels of employee engagement will affect innovation in organizations positively and vice versa. The correlation between innovation and the independent variables is significant except for emotional job demands, stress-level, and age. Innovation and autonomy have the highest correlation, while innovation and age discrimination have the lowest correlation. Furthermore, the analysis reveals that the correlation between employee engagement and nine independent variables is significant, while the remaining ones are not. The non-significant variables in relation to employee engagement are emotional-, workload, and skills- job demand, and gender. Innovation climate is the highest correlated to employee engagement out of all independent variables.

These findings will be interpreted and discussed in the next chapter.

Table 2: Correlation matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Innovation (1)														
Employee engagement (2)	.39**													
Transformational leadership (3)	.28**	.34**												
Autonomy (4)	.42**	.34**	.29**											
Emotional job demands (5)	.03	-.02	-.17**	-.19**										
Workload demands (6)	.14**	.02	-.15**	-.03	.36**									
Skills job demands (7)	.14**	.03	-.00	.03	.33**	.43**								
Special competence job demands (8)	.27**	.24**	-.00	.09**	.40**	.43**	.37**							
Age-discrimination (9)	-.06*	-.08**	-.26**	-.12**	.10**	.13**	.09**	.02						
Innovation climate (10)	.40**	.39**	.61**	.35**	-.20**	-.12**	-.04	.05	-.23**					
Stress-level (11)	-.05	-.23**	-.18**	-.21**	.36**	.39**	.35**	.14**	.16**	-.23**				
Work-life balance (12)	.27**	.16**	-.10**	.17**	.31**	.44**	.30**	.36**	.12**	-.05	.32**			
Weekly working hours (13)	.17**	.09**	.03	.17**	.03	.28**	.13**	.18**	-.05	.03	.04	.25**		
Age (14)	.01	.13**	-.05*	.08**	-.13**	-.10**	-.24**	.08**	.09**	.05	-.26**	.02	-.12**	
Gender (15)	-.11**	-.01	.03	-.25**	.21**	.04	.02	-.02	.00	-.02	.12**	-.10**	-.21**	-.10**

Significance level: **p<.05, ***p<.01

4.2 Multiple linear regression

Table 3 presents two multiple regression analyses to show the influence of the antecedent variables on the dependent variables: employee engagement and innovation. Using multiple regression analyses helps determine how effectively the independent variables can predict the dependent variables and how the variables interact with one another. To demonstrate how all levels (organizational, team, and individual) represent employee engagement and innovation, two multiple regression analyses are carried out in three steps. It is easier to understand how the independent variables interact by isolating the levels and adding each at a time. When a new group of variables is introduced, one may notice a change in the effect of an independent variable. This can be confirmed by looking at the standardized beta values compared to the correlation matrix.

Table 3: Effects of the antecedent variables on employee engagement and innovation in a multiple linear regression

Variables	Employee engagement			Innovation		
	Level 1 β	Level 2 β	Level 3 β	Level 1 β	Level 2 β	Level 3 β
TL	.26***	.15***	.17***	.20***	.05	.07
Autonomy	.25***	.21***	.15***	.35***	.30***	.26***
Emotional job demands						
Workload job demands				.09	.10***	.04
Skills job demands				.16	.03	.01
Special competence - job demand	.22***	.21***	.19***	.20***	.18***	.15***
Age discrimination		.03	.03		.03	.02
Innovation climate		.22***	.19***		.28***	.28***
Stress-level			-.19***			
Work-life balance			.15***			.16***
Weekly working hours			.00			.03
Gender						-.02
Age			.05**			
R ²	.23	.26	.30	.27	.32	.36
R ² change	.23	.03	.05	.27	.05	.04
Sig. F Change	<.001	<.001	<.001	<.001	<.001	<.001

Significance level: **p<.05, ***p<.01

4.2.1 Organizational level

In the multiple linear regression, the independent variables on the organizational level are TL, autonomy, and all four dimensions of job demands. As illustrated in Table 3, all independent variables on this level have a significant and positive relationship with employee engagement except for emotional-, workload-, and skills job demand. Looking at the beta values, TL is higher for employee engagement, and autonomy has a higher beta value for innovation. This indicates that autonomy has a more significant relationship with innovation than employee engagement, and TL has a more significant relationship with employee engagement. Furthermore, the R-square for employee engagement is .23 in level 1 and .27 in level 1 for innovation, indicating that level 1 explains 23% and 27% of the variance for the dependent variables, where innovation is higher than employee engagement. Two of the variables at the organizational level, TL and autonomy, are significantly correlated with employee engagement and innovation, which is also supported by the correlation matrix in Table 2. This can be explained by the fact that increased levels of TL and autonomy will improve employee engagement and innovation. Emotional-, workload, and skills job demands has no significance in the correlation matrix, nor the multiple regression on any levels, and all the hypotheses regarding their relationship to employee engagement have been rejected. Special competence, however, appears to be a relatively strong predictor of employee engagement on an organizational level. Workload and skills job demand lose their significance when added to the regression, and contrary to our hypotheses, is a positive predictor for innovation.

4.2.2 Team level

For level 2 in the multiple regression, two more variables from the team level are included; these are age discrimination and innovation climate. According to Table 2, age discrimination is negatively correlated with employee engagement and innovation. However, in the multiple regression analysis in Table 3, this variable is insignificant with any of the dependent variables. Innovation climate is significant at both levels, indicating a positive relationship between innovation climate and the dependent variables. According to the results of the multiple regression analysis, the variables age discrimination and innovation climate do have an impact on the relationship between the dependent and the independent variables from the previous level, as demonstrated by the fact that all the independent variables' beta values decrease from level 1 to level 2. When age discrimination and innovation climate are included, for example, TL that are significant at level 1 for innovation and turn insignificant at level 2. Table 2 shows

a high correlation between TL and innovation climate, but in Table 3, TL goes from being highly significant to insignificant when innovation climate is added. When there is a high correlation between the two variables, there is multicollinearity (Daoud, 2017). When multicollinearity occurs, it can be difficult to separate the individual impacts of the correlated variables. This is because it is difficult to know the independent effects of each variable, as the collinear variables may overlap.

Looking at the four dimensions of job demands, special competence job demands are still a positive and significant predictor of employee engagement and innovation. There is a small decrease in the beta value, but its relationship to both dependent variables is still the strongest compared to the other dimensions. Workload job demands become significant when added with variables on the team level, and the beta value increases from .09 to .10, which is an interesting detail. While skills job demand is still statically insignificant, its relationship to innovation slightly decreases because the other variables have more impact.

Furthermore, when age discrimination and innovation climate are included as independent variables, the R-square for employee engagement and innovation increases from level 1 to level 2, showing a change for both dependent variables. For employee engagement, the R-square is .26, and the R-square for innovations is .32. This indicates that level 2, where innovation again is higher than employee engagement, explains 26% and 32% of the variance for the dependent variables.

4.2.3 Individual level

Moving on to the final level of the multiple regression analysis, which includes variables from the individual level, such as stress-level, work-life balance, weekly working hours, gender, and age. The beta value for all independent variables from level 2 to level 3 decreases when those variables are introduced, except for age discrimination, which maintained its beta value, and TL, which slightly increased. In level 3 for employee engagement, all variables except age discrimination and weekly working hours were significant. For innovation at level 3, only autonomy, innovation climate, and work-life balance were significant when including the variables from the individual level. Workload job demands lose their significance on the individual level, and the beta value decrease from .10 to .04. This indicates that workload

demands do not operate as an important predictor of innovation compared to the other variables. Skills job demand remains insignificant and slightly decreases the beta value.

As all variables except age discrimination for employee engagement are significant on level 3, this shows that the following hypotheses are confirmed: 2A, 3A, 6A, 7A, and 11A. A shift in the beta values for variables on level 2 can be seen when the last independent variables on level 3 are added to the regression. When the variables on level 3 are added to the variables on level 2, all beta values for the independent variables decrease, except for TL. The significance level is constant throughout all levels and variables, and the hypotheses are supported. Starting at .26 on level 1 and decreasing to .16 on level 3, the beta value for TL has the largest decline of all the independent variables. This clarifies that when level 2 and 3 variables are included in the regression, TL is not the factor determining or influencing employee engagement the most. Furthermore, age discrimination and weekly working hours are the two variables that are not significant in the regression analysis. Hypothesis 5A is only partially confirmed, while 9A is rejected. Work-life balance and employee engagement are significant, meaning that hypothesis 8A is rejected, as employees with less balance are more engaged. Workload-, emotional-, skills-, and special competence job demand are all insignificant in the regression analysis, and hypotheses H4A1, H4A2, H4A3, and H4A4 are therefore rejected. Moreover, gender is found to be insignificant in both the regression analysis and correlation matrix, meaning hypothesis H10A is also rejected.

Tabell 4: Hypotheses for employee engagement

H2A	TL is positively related to employee engagement
H3A	Autonomy is positively related to employee engagement
H4A1	Emotional job demand is negatively related to employee engagement
H4A2	Workload job demand is negatively related to employee
H4A3	Skills job demand is negatively related to employee engagement
H4A4	Special competence job demand is negatively
H5A	Age discrimination is negatively related to employee engagement
H6A	Innovation climate is positively related to employee engagement
H7A	Stress-level is negatively related to employee engagement
H8A	Work-life balance is positively related to employee engagement
H9A	Weekly working hours is negatively related to employee engagement
H10A	There will be a higher level of employee engagement among men compared to women

Looking at innovation, there are slightly more changes in the multiple regression on all three levels. TL has a minimal decrease in the beta value on level 3 and remains insignificant. As seen in Table 3, the beta value for TL changes from .05 on level 2 to .04 on level 3. While it still indicates that TL is positively related to innovation, it becomes less important when all independent variables on level 3 are introduced. Hypothesis 2B is, therefore, partially confirmed. A discussion of these findings will be elaborated in the next chapter. Moving on to the other variables on the organizational level, autonomy, and special competence job demand is still highly significant and positively related to innovation. The beta values for autonomy are higher for innovation, but like for employee engagement, the values decrease when new variables are introduced in the regression. This means that hypothesis 3B is confirmed. Looking at the four dimensions of job demand, the findings are distinct. The results for emotional job demand are the same for innovation as employee engagement, where the variable is insignificant in both the regression analysis and correlation matrix, rejecting hypothesis H4B1. Workload job demands lose their significance in level 3 and have a decrease in the beta value. This indicates that job demands in the form of workload are not a major predictor for innovation compared to the other variables on this level, and hypothesis H4B2 is only partially confirmed. Hypothesis H43B is also partially confirmed because skills job demand loses significance when introduced to the regression analysis. On the other hand, special competence job demand is still significant and proves to be an important antecedent variable for innovation. Based on this, hypothesis H4B4 is therefore confirmed.

Table 5: Hypotheses for innovation

H2B	TL is positively related to innovation
H3B	Autonomy is positively related to innovation
H4B1	Emotional job demand is positively related to innovation
H4B2	Workload job demand is positively related to innovation
H4B3	Skills job demand is positively related to innovation
H4B4	Special competence job demand is positively related to innovation
H5B	Age discrimination is negatively related to innovation
H6B	Innovation climate is positively related to innovation
H7B	Stress-level is negatively related to innovation
H8B	Work-life balance is positively related to innovation

H9B	Weekly working hours is negatively related to innovation
H10B	Men will have a higher perceived innovation capability compared to women
H11B	Age is positively related to innovation

Age discrimination is the same for both employee engagement and innovation, with the same beta values on both levels, and it is not significant. Hypothesis 5B is, therefore, partially confirmed. The last variable on the team level, innovation climate, becomes slightly less important when introduced to variables on level 3, but it is still significant. This means that hypothesis 6B is confirmed. Of all the independent variables from the individual level, only work-life balance is significant when added to the regression, meaning hypothesis 8B is rejected. Furthermore, there is a positive and significant relationship between the variables regarding work-life balance and innovation. This indicates that employees with less balance tend to be more innovative.

Further, table 3 shows that weekly working hours are insignificant but positively related to innovation. There is, however, a positive and significant bivariate correlation between weekly working hours and innovation. This means that employees who work longer hours than the average hours in Norway, which is 37,5 hours per week – are more innovative at work. Hypothesis 9B is therefore rejected. As seen in Table 2, gender has a negative and significant bivariate correlation to innovation but is not significant in the regression. This means that hypothesis 10B is partially confirmed. Lastly, age is found to have a positive insignificance in the correlation matrix and is therefore not included in the regression analysis. This finding suggests that gender does not serve as a predictor for innovative outcomes, thus rejecting hypothesis 11B.

The reported R-square for employee engagement in level 3 was .30, meaning that the model explains 30% of the variance in employee engagement. For innovation, the reported R-square in level 3 was .36.

Table 6 shows an overview of all the hypotheses and the result.

Table 6: Hypotheses overview

Hypothesis	Result
H1: Employee engagement is positively related to innovation	Confirmed
H2A: TL is positively related to employee engagement	Confirmed
H2B: TL is positively related to innovation	Partially confirmed
H3A: Autonomy is positively related to employee engagement	Confirmed
H3B: Autonomy is positively related to innovation	Confirmed
H4A1: Emotional job demand is negatively related to employee engagement	Rejected
H4A2: Workload job demand is negatively related to employee engagement	Rejected
H4A3: Skills job demand is negatively related to employee engagement	Rejected
H4A4: Special competence job demands is negatively employee engagement	Rejected
H4B1: Emotional job demand is positively related to innovation	Rejected
H4B2: Workload job demand is positively related to innovation	Partially confirmed
H4B3: Skills job demand is positively related to innovation	Partially confirmed
H4B4: Special competence job demand is positively related to innovation	Confirmed
H5A: Age discrimination is negatively related to employee engagement	Partially confirmed
H5B: Age discrimination is negatively related to innovation	Partially confirmed
H6A: Innovation climate is positively related to employee engagement	Confirmed
H6B: Innovation climate is positively related to innovation	Confirmed
H7A: Stress-level is negatively related to employee engagement	Confirmed
H7B: Stress-level is negatively related to innovation	Rejected
H8A: Work-life balance is positively related to employee engagement	Rejected
H8B: Work-life balance is positively related to innovation	Rejected
H9A: Weekly working hours is negatively related to employee engagement	Rejected
H9B: Weekly working hours is negatively related to innovation	Rejected
H10A: There will be a higher level of employee engagement among men compared to women	Rejected
H10B: Men will have a higher perceived innovation capability compared to women	Partially confirmed
H11A: Age is positively related to employee engagement	Confirmed
H11B: Age is positively related to innovation	Rejected

5.0 Discussion

We have investigated whether employee engagement and innovation have a relationship and the role of factors on individual, organizational, and team levels as antecedent variables. This chapter is aimed to elaborate on the findings from our statistical analyses and results. Moreover, we seek to compare our findings to relevant theories previously applied in the thesis. Based on our findings, the purpose is to answer the research questions in Table 1.

Employee engagement and innovation

Throughout the search for relevant literature, there is no doubt that employee engagement is crucial for organizational success. Many researchers strive to identify what drives employee engagement and why it is important. Organizations with engaged employees experience higher levels of employee retention due to decreased turnover rates and reduced intention to leave and enhanced profitability due to increased productivity (Markos & Sridevi, 2010). It is, therefore, important to examine the antecedent variables for employee engagement and determine which of them have a positive or negative influence on the dependent variable. The results from the regression analysis in this study confirm the hypotheses regarding most of the independent variables and employee engagement. The scale used for employee engagement is proven to be valid and reliable, strengthening the findings in our study.

As previously stated, innovation is an essential contributor to an organization's success. To succeed in today's growing market, organizations need to be innovative to have a competitive advantage and be able to adapt to the changes. Numerous factors impact innovation for individuals, but the organization has a vital role in creating an innovative environment to make the employees feel more innovative. The literature claims that organizations often misunderstand the terms innovation, and a common misunderstanding is that innovation must be something radical or revolutionary (Kahn, 2018). This kind of innovation is quite demanding, and it is suggested by Khan (2018) to pursue incremental innovation alongside radical innovation. Moreover, enabling small victories contributes to the organization's overall success, where a balanced approach ensures that the innovation efforts are distributed well across both incremental and radical innovations.

A positive and significant correlation between employee engagement and innovation can be seen in the correlation matrix, which aligns with our research review on this relationship.

5.1 Independent variables

5.1.1 Organizational level

Transformational leadership

The first hypothesis for TL is that there is a positive relationship between TL and engagement. The correlation matrix demonstrates a positive and significant relationship between the two variables, supporting TL's hypothesis regarding engagement. Therefore, there is a higher likelihood that employees under transformational leaders will be more engaged at work. This is further demonstrated and supported by the regression analysis results, where TL is significant at all levels. This also demonstrates that TL is a reliable predictor for employee engagement. It is interesting as this is in accordance with the existing theory conducted from other parts of the world, indicating that it also applies to Norwegian workers. According to the TL theory by Bass and Riggio (2006), transformational leaders have a good effect on their employees and have a significant impact on their motivation and performance level. The result of this hypothesis aligns with Bass and Riggio's (2006) ideas on the TL theory and more recent research that finds a positive relationship between TL and employee engagement.

Moving forward to the second hypothesis in this study, this was partially confirmed. Several studies have been conducted regarding the impact of TL on innovation in organizations. As the literature by Bass and Riggio (2006) explains that transformational leaders strive to inspire the employees and allow them to develop, we investigated the theory further as it was believed that this could make employees more innovative. The indirect relationship between the psychological impact of TL on enhancing knowledge-sharing and boosting intrinsic motivation (Masood & Afsar, 2017) and the theory that explains that TL increases trust amongst employees and leaders (Arman et al., 2019) was another foundation for the hypothesis. Furthermore, according to the Pearson correlation coefficient, TL is a substantial predictor of innovation. However, in the regression analysis, TL is insignificant at all levels since other variables have a bigger impact, making innovation less important. When the team-level variables are added, the regression analysis shows a significant change in the beta coefficient for TL and innovation, which causes TL to become insignificant. This means that the other added variables modify the relationship between TL and innovation due to better relationships, where the variable innovation climate plays a larger role when introduced at level 2.

In summary, TL is one of the most important predictors of employee engagement and a strong antecedent variable. It is exciting to see that the results of this study are mainly consistent with theory through the decades, which confirms the credibility of the findings. This is also consistent with previous findings in Norway, where it is found that TL significantly impacts work engagement (Breevaart et al., 2014; Ree & Wiig, 2020).

Autonomy

The first hypothesis for autonomy is based on the well-known literature by Hackman and Oldham (1976) and Karasek (1979), both highlighting a positive relationship between autonomy and employee engagement. The regression analysis supported a positive and significant relationship between the two variables, which was also confirmed by the correlation matrix. This explains how employee engagement can be reliably predicted by autonomy. Our findings complement existing theories by revealing that the positive relationship between employee engagement and autonomy also applies to Norwegian workers.

Moving on to the second hypothesis, our review of the relevant literature revealed that autonomy is an encouraging factor for innovation and innovative work behavior. According to relevant theory, employees with high autonomy and more freedom in performing their job responsibilities are more likely to explore and develop inventive concepts. We also discovered a negative correlation between innovation and a work climate in which individuals are restricted and given less autonomy. Autonomy is associated with a significant and positive bivariate relationship to innovation, matching our literature findings on employee engagement and autonomy. The same applies to the results in the regression analysis, which supports autonomy's role as a positive predictor of innovation in Norwegian working life.

In addition to being an influential antecedent variable compared to the other independent variables, autonomy is considered one of the most important predictors of employee engagement and innovation. Furthermore, most of the chosen independent variables have a positive and strong link to autonomy, particularly innovation climate. This indicates that an increase in autonomy is likely to positively impact these variables as well. According to findings from our literature research and our statistical analyses, giving employees greater autonomy will enhance engagement and innovation, which is believed to be highly beneficial for most, if not all, organizations.

Job demand

The positive coefficient in the correlation matrix and regression analysis has led us to reject all our hypotheses regarding job demand as a positive predictor of employee engagement and innovation. Many researchers use the term job demand to describe the physical and psychological stressors related to work. Contrary to the relevant literature presented in this thesis, our thesis uses a scale with four dimensions to measure job demands. Workload job demands, skills job demands, emotional job demands, and special competence job demands are the four dimensions. To our knowledge, no studies have investigated the relationship between neither job demands and employee engagement or job demands and innovation. Most research points to the fact that job demands—in the form of heavy workloads, short deadlines, and limited autonomy—frequently lead to health issues and stress for workers.

Job demands for special competence employees appear to be a positive and important indicator of employee engagement and innovation. The term “special competence job demands” describes roles and responsibilities that require certain abilities. For instance, our findings on this relationship could be explained by the fact that a worker with special competence might feel like their work has a higher purpose as they can utilize their special skills in addressing challenging and complex problems. Based on existing theory and our analyses in this thesis, individuals with special competence job demands are likely to experience increased engagement and be innovative if they are given more autonomy and the opportunity to make independent decisions. Employees with autonomy and the freedom to carry out their tasks without supervision may feel more competent and invested in their work, which may increase engagement and innovation. Additionally, job demands following special competence jobs may stimulate employees’ cognitive abilities, which could eventually encourage innovative behaviors. Having special competence frequently calls for an individual to develop unique problem-solving techniques that can drive innovation within the firm.

Additionally, the correlation matrix shows a statistically significant positive relationship between workload- and skills, job demand, and innovation. Although the two variables lose their significance when added to the regression analysis, they are still positive compared to the other independent variables. These results are interesting because numerous research suggests a negative relationship between job demands—such as workload job demands—and employee engagement. However, the Job Demand-Resource (JD-R) model developed by Bakker and

Demerouti in 2006 provides support for our findings on this relationship. According to the JD-R model, high workload demands can lead to increased employee engagement when sufficient job resources are available to support employees in meeting those demands. This indicates that when employees perceive their workload as challenging but have the resources to manage it, it could increase engagement (Bakker & Demerouti, 2006). The JD-R model also supports the idea of workload demands to positively influence innovation, as the availability of sufficient resources and support could increase creativity and innovation. Overall, the positive relationship between job demands, such as workload, skills, and emotional demands, and innovation and employee engagement may initially seem counterintuitive. However, it is plausible that when individuals face higher job demands, they are stimulated to find innovative solutions and utilize their skills and competencies more effectively. These job demands may provide challenges and opportunities for growth, which can lead to increased engagement and innovation. While we cannot support existing research on job demands being a negative predictor for employee engagement and innovation, our findings indicate that job demands do not necessarily have to be disruptive to employees' well-being when managed correctly with the right resources and a supportive work environment.

5.1.2 Team level

Age discrimination

Our first hypotheses regarding age discrimination are based on findings from previous research on how age discrimination in the workplace is negatively linked to employee engagement and innovation. In this study, we used the Nordic Age Discrimination scale, which is validated by Furunes & Mykletun (2010), and the scale proved to be a satisfactory instrument to measure age discrimination. Many researchers have concluded that age discrimination or ageism is a negative predictor of employee engagement and innovative work behavior because of the negative prejudice causing a specific group of workers to feel less competent and left out in the workplace. In this study, we have used the term age discrimination as discrimination against older workers, which is a common use of the term. The Pearson correlation coefficient indicates that age discrimination is a significant and negative predictor of both dependent variables. However, when the variable is put in the multiple regression analysis with other independent variables, it loses its significance, and the coefficient becomes positive. In other words, the presence of the other variables alters the relationship between age discrimination and employee

engagement and innovation due to stronger relationships. Both hypotheses on age discrimination are, therefore, partially confirmed.

We find these results to be interesting and a topic for discussion. The positive coefficient in the regression analysis does not necessarily imply that age discrimination positively affects employee engagement and innovation. One could interpret this as when other variables are considered, higher levels of age discrimination may be associated with higher levels of employee engagement and innovation. Possible explanations for this could be, for instance, when age discrimination in the workplace occurs, older workers may be assigned to specific tasks or roles that require their expertise or knowledge, which can contribute to older workers becoming more innovative and engaged. Older workers who face discrimination because of their age might also develop a motivation to learn and develop skills that are not expected of them to prove their worth and overcome the stereotypes. These are possible explanations for our analysis's findings; however, age discrimination is a negative and unfair behavior that should not be practiced in any organization. We cannot fully support previous literature on the relationship between age discrimination and the dependent variables and suggest that more research be carried out to fully understand the effects of age discrimination on employee engagement and innovation, as we could not find enough studies reflecting the direct link between the variables.

Innovation climate

The first hypothesis for the variable innovation climate is based on prior research on the potential effects of innovation climate on employee engagement, where innovation climate is characterized as one factor contributing to employee engagement (Afsar & Umrani, 2020). There has not been a lot of prior research on the direct relationship between innovation climate and employee engagement. But as innovation climate is a contributing factor to engagement, and research indicates that there could be a relationship between the variables. Furthermore, according to the concept behind innovation climate, it is discovered that if the innovation climate is high, employees are more likely to explore higher levels of engagement and performance (Garcia-Buades et al., 2016), and this is the fundament we used to construct the hypothesis. The outcome of our statistical analysis supports our hypothesis and the prior research, as the correlation coefficient and standardized beta of innovation climate are

significant and positively related to employee engagement. Thus, innovation climate is a positive predictor of employee engagement and is representative of Norwegian working life.

The second hypothesis that the innovation climate is positively related to innovation is also confirmed. Several studies prove a positive relationship between innovation climate and innovation. According to previous studies, a higher innovation climate has been shown to foster employees' passion for invention (Kang et al., 2015). This indicates that developing and maintaining a highly innovative climate within the organization clearly impacts each individual's level of innovation. The regression analysis supports this; the correlation coefficient and standardized beta of the variable innovation climate are significant and strongly correlated with innovation. However, it is also important to recognize that the innovation climate, which may be influenced by various elements, including leadership, culture, and dynamics, plays a significant role for innovation in organizations. Organizations probably focus on innovation differently depending on whether they have the necessary resources and support structures. Additionally, it is reasonable to believe that various industries, companies, and countries would have disparities. Furthermore, according to the regression analysis, innovation climate is of the most significant predictors of employee engagement and innovation at all levels, which means that it clearly impacts the variables.

5.1.3 Individual level

Stress-level

Although there are not many studies on the direct relationship between stress-level and the two dependent variables, stress is considered an important variable when examining the relationship between employee engagement and innovation. There is scientific evidence that suggests workplace stress could have a part in various health problems that affect employees, including burnout, which is often caused by exhaustion from different types of job demands (Maslach, Schaufeli, & Leiter, 2001). Stress at work can impair creativity, halt personal growth, and harm an individual's motivation and well-being at work (Shirom, 2003). Existing literature on stress-level and employee engagement agrees that high-level work-related stress negatively affects individuals' well-being, which could potentially affect their engagement at work. Our statistical analysis confirms our hypothesis and supplies to previous studies on this relationship, as both the correlation coefficient and standardized beta of stress-level are significant and negatively related to employee engagement.

Regarding the relationship between stress-level and innovation, the results could not confirm our hypothesis. Contrary to various findings about stress-level being a negative predictor of innovation, the bivariate correlation between the two variables in our analysis was not statistically significant, and there is no strong evidence suggesting that stress-level is negatively related to innovation. While stress is commonly associated with negative outcomes, some newer studies suggest that moderate stress levels can potentially increase workers' capability to innovate and be creative. A study by Albort-Morant, Ariza-Montes, Leal-Rodrigues & Giorgi (2020) examined how five dimensions of work-related stress impacted employees' innovative behavior. The five dimensions included work-related stress, colleagues' support, job autonomy, job demands, and role ambiguity. Their study revealed that autonomy, job demand, and role ambiguity positively and significantly impacted employees' innovative capabilities. These findings align with our literature on autonomy and job demand, which explains how high levels of job demand combined with high levels of autonomy can increase employees' intrinsic motivation and innovativeness.

Additionally, the positive relationship between stress levels and innovation may be explained by the concept of "eustress" (Bienertova-Vasku, Lenart & Scheringer, 2020), which refers to positive stress or the optimal level of stress that motivates individuals to perform at their best. Moderate levels of stress could enhance focus, creativity, and problem-solving abilities, thereby facilitating innovative thinking. However, it is important to remember that excessive or chronic stress can harm individuals' well-being and hinder their ability to effectively engage and innovate. Based on our results about innovation and stress-level, we cannot add to the existing theory about stress having a negative relation to innovation. However, we agree that organizations should aim to create a supportive work environment that manages stress levels and provides resources to help employees cope with and minimize the negative impact of stress.

Work-life balance

The first hypothesis for work-life balance is looking into if the variable is positively related to employee engagement, meaning that we hypothesize that a "good" balance between work and personal life will have a positive effect on employee engagement. According to the literature, generation Y puts more value on work-life balance than earlier generations (Pandita & Singhal,

2017), making it an interesting topic to investigate. The first hypothesis is based on previous research, where most findings indicate a positive relationship between a good work-life balance and employee engagement. According to Wood et al. (2020), a good work-life balance increases motivation and engagement at work, which led to the first hypothesis. Furthermore, work-life balance is positive and significant in the correlation matrix and is also positive and highly significant in the regression analysis. The scale for this variable indicates that employees who have less work-life balance are found to be more engaged at work compared to those who have a good work-life balance. This means the first hypothesis is rejected, which is highly unexpected and interesting. There has not been a lot of research about work-life balance in Norway and the findings from Norwegian working life are the opposite of the previous research.

Furthermore, we hypothesize that a good balance between work and personal life will positively affect innovation. There has not been much literature regarding work-life balance and innovation. However, the previous literature states that a good work-life balance is a crucial mediator for innovation (Jensen et al., 2017). Therefore, the hypothesis was based on the relationship stating that stress is reduced when an employee experiences a good balance between work and personal life (Jaharuddin & Zainol, 2019). Therefore, it was assumed that the combination of reduced stress and a good work-life balance would lead to a more innovative employee. Work-life balance and innovation were positively correlated in the correlation matrix, and the variable was also positively and significantly correlated in the regression analysis. This implies that the second hypothesis also is rejected. This indicates that employees who experience less work-life balance are more innovative at work.

As the findings indicate, employees who have less balance between work life and personal life are found to be more engaged and innovative at work, which raises several questions. One possibility for this is that people who spend more time on work-related activities, for instance, are more innovative and engaged than people who spend less time work these activities. Employees might be more engaged and innovative to execute their tasks more effectively when confronted with increased work demands and challenges at work. Another possibility is that some people may voluntarily prioritize their work over their personal life, which could make them feel more committed to work and encourage them to be more innovative if they strive to excel in their role. Overall, limited theory can be found to support the rejected hypotheses. According to theory, a positive relationship is commonly between a good work-life balance and

engagement & innovation. We, therefore, propose more research on this topic for Norwegian working life, as this unexpected result contradicts and challenges the existing literature.

Weekly working hours

The hypotheses regarding weekly working hours are based on previous research on what effect weekly work hours have on employee engagement and innovation. The literature has similar findings, where most suggest that longer work hours contribute to less engaged and innovative employees (Amabile & Kramer, 2011). This is the foundation for the hypotheses stating that working overtime or extra hours beyond the “normal” weekly hours will lead to less engaged and innovative employees. It is debatable whether longer work hours alone contribute to this, but it is found that only a small number of hours of unscheduled overtime is linked to poor mental health (Van der Hulst & Geurts, 2001). However, it is also found that extra hours are positively correlated with firm innovation and productivity (Ko & Choi, 2019).

The second hypothesis regarding working hours and innovation is drawn from the theory by Amabile and Kramer (2011), who found that longer working hours cause employees to be less innovative and creative at work. Previous research says that if an employee has more autonomy over their work schedule, it will encourage an inventive work environment (Amabile & Kramer, 2011). Furthermore, mandatory overtime was also linked to a negative effect on employees compared to those who voluntarily chose to work overtime hours (Watanabe & Yamauchi, 2018), which leads us to assume that working extra hours would make employees less engaged.

The correlation matrix shows that weekly working hours are positively related and significant to employee engagement and innovation, and in the regression analysis, it becomes insignificant for both variables. Both hypotheses are therefore rejected. In other ways, the presence of the other variables alters the relationship between weekly working hours, employee engagement, and innovation due to stronger relationships. This proves that employees who work extra hours are more engaged and innovative. This is an interesting result as it contradicts previous research and our hypotheses. There could be several reasons explaining this result. One of the reasons could be that employees that work extra hours may be driven by their intrinsic motivation and therefore enjoy their time at work, making it easier for them to work more hours. Working more hours could also allow an employee to progress and have more time to dedicate to various assignments, which might encourage them to be more innovative.

Gender

Regarding the relationship between gender and employee engagement, there were several differences in the theory. In some studies, women were shown to be more engaged than men, but in others, there were no gender differences. Although most previous research found that males were slightly more engaged at work, it was common for the previous research to show marginal gender differences either way, if there were any. This led to our hypothesis that men will be more engaged at work than women. The results did not confirm the hypothesis, and it was rejected. This implies no gender-related disparities in Norwegian working life regarding employee engagement, proving that gender does not predict employee engagement at work. Furthermore, Schaufeli et al. (2018) found some disparities between gender and employee engagement in different countries. As the results show that gender does not predict employee engagement, another factor likely contributes to the gender differences found by Schaufeli et al. (2018) and previous research indicating gender differences. There could be differences due to cultural, demographics, and individual reasons. This result is interesting as it contradicts some of the literature and the findings by Hoogedorn et al. (2013), who found that teams with a gender balance performed better than teams with a majority of men. This also indicates that employee engagement and performance at work are unaffected by gender balance in teams.

The hypothesis for gender and innovation was partially confirmed as the correlation matrix indicated a negative and significant relationship between the two variables. In the regression analysis, however, the variable loses its significance, and we cannot fully confirm the hypothesis about men being more innovative than women. Our search for relevant literature found that women's innovative ideas were often undermined by family situations, risk aversion, competitiveness, and discriminatory factors (Koffi, 2021). The theory about men being more innovative than women can be supported by several studies, and common to these findings are related to the expectation of men to be more innovative and women are therefore not recognized or rewarded equally (Luksyte et al., 2018; Nählinder, 2010). This could explain how many women may be hesitant to explore and develop their innovative sides because of the existing prejudice in the workplace.

Age

Contrary to common beliefs, various research and empirical evidence show that age positively affects employee engagement. This could be explained by how older workers develop a better

intrinsic motivation to work because of their stronger professional identity and have more resources available to deal with demanding work situations (Kim & Kang, 2016). As there are not enough studies to fully conclude that employee engagement increases with age, evidence suggests that it does not necessarily decrease either. However, our results support existing theory as the correlation matrix shows age as a positive and significant predictor of employee engagement. Furthermore, the multiple regression indicates a small but positive and significant relationship. This implies that older workers are likely to be more engaged in their work compared to younger workers, meaning the negative stereotypes about older workers are undermined, and our hypothesis is confirmed.

Our hypothesis on age and innovation, on the other hand, could not be confirmed. The correlation matrix shows a slightly positive coefficient and no statistical significance between the two variables. Like age and employee engagement, there have not been enough studies conducted to determine the relationship between age and innovation. Evidence suggests both a positive and negative relationship, which made us base our hypothesis on the positive relationship between age and employee engagement, hoping we could support the idea of older workers being as innovative as younger workers.

5.4 Limitations of the study

Firstly, our study focused on employee engagement and innovation in organizations, with variables such as job demand, work-life balance, and work hours within the context of Norwegian working life. Even though this choice was mainly motivated by the relatively limited research on these variables in Norway, it is important to acknowledge certain limitations in this thesis.

Although the data sample used in this thesis includes many different sectors, it is important to note that our findings may not be generalizable to employees outside of Norway. Therefore, some caution should be exercised in applying these results to different cultural or geographical contexts. The Norwegian working life may differ from other countries, making it more difficult to use the interpretation of our findings in a broader global context. Furthermore, future studies should consider expanding the research to include different regions and accounting for potential variances among other demographic groups for a more comprehensive understanding.

Another important limitation of this study is regarding the data collection process, which only included responses at a specified period. As a result, the participant's responses are not tracked over a long period, making it difficult to evaluate potential changes in the variables over time. To address this limitation, conducting a study following the same respondents for a longer period would be possible. It would be interesting to conduct a future study using the same group of people to observe them over time. By doing so, it would be possible to observe any changes and better understand how the variables interact and influence each other over a longer period.

Furthermore, since the data is collected through surveys, there is always some uncertainty regarding the accuracy of the respondents' answers, which may have caused minor errors in the dataset. Additionally, it is important to note that the data was collected at the individual level. Our categorization of variables into organizational and team levels was based on individual responses, meaning that the study is not a multilevel study. Combining a multilevel study with a representative sample of Norwegian employees is, therefore, not realistic. While a multilevel study could be conducted in a smaller number of organizations, the possibilities for generalizations to Norwegian working life would be limited.

Finally, future research should consider conducting comparative studies across different countries to provide insight into cross-cultural variations between our variables. By broadening the research scope, we can obtain a deeper understanding of these phenomena on a global scale and enhance the generalizability of our findings beyond the Norwegian context.

5.5 Practical implications in Norwegian working life

As our dataset is based on Norwegian Working life, it is important to examine how the findings could affect this population. The data used in this thesis is proven to be reliable, and the practical implications would be regarding employee engagement and innovation in organizations in Norway. Furthermore, some of our findings were contrary to what we found in the literature research, and some areas need to be considered more than others.

One of the practical implications that is considered important is regarding autonomy. Autonomy is believed and often proved to be a positive predictor of employee engagement and innovation. Our results show a positive connection between autonomy and the two dependent variables; however, it is not fully proven that employee engagement and innovation increase as autonomy

increases. It is not a matter of just adding or increasing autonomy for Norwegian employees but fostering a culture that values and encourages employees to take ownership of their work and provides the right resources and opportunities for employees to have more freedom when doing their work. The potential benefit of fostering a culture that encourages autonomy is increased engagement, which could enhance creativity and innovation. However, it is important to know the potential resistance to change. Some individuals may prefer a clear direction and guidance rather than making the decisions themselves. In addition, one may consider having guidelines to avoid inconsistency that could affect the standards in the organization. In other words, it is a complex concept that needs to be explored further with caution when implementing it in the workplace.

Another interesting finding is related to job demands. As the theory initially suggested that job demands, in general, have a negative effect on employees' health and well-being which could affect overall engagement and impair innovative work behavior, our findings suggest otherwise. The practical implication regarding job demands in organizations is related to considerations that need to be taken to manage the various job demands on employees in Norway. Many researchers have studied the concept of job demands over the years. While many agree that job demands such as heavy workloads and time pressure impairs engagement and satisfaction, some suggest that moderate levels of job demand that are properly managed could be beneficial for fostering engagement and innovativeness. The practical implications involve supportive leadership, where managers are equipped to recognize and address signs of stress/burnout due to excessive job demands.

Moreover, work-life balance is a crucial factor that needs to be addressed as it is not only relevant for Norwegian workers. Work-life balance impacts both individuals and organizations and is crucial for maintaining a healthy relationship between work and one's private life. While engagement and innovation are crucial for organizational success, research indicates that they can sometimes come at the expense of maintaining a healthy work-life balance. Surprisingly, our results indicate that for Norwegian working life, individuals who report mutual disturbance of their work-life balance and are too devoted to work tend to be more engaged and innovative. This is a complicated concept that needs to be investigated further, and practical implications involve organizations being aware of employees' work-life balance and the consequences.

The last factor considered important to discuss is gender and innovation, which must be addressed with caution, as generalizations about the innovative abilities of women or men can perpetuate negative stereotypes. While we found various empirical evidence suggesting that men have a higher perceived level of innovative behaviors, we must consider the societal factors that influence the gender imbalance. Norway is known for its efforts toward gender equality and has made big progress in reducing the gender imbalance in Norwegian working life. Like many other countries, Norway experiences occupational segregation, meaning that men and women tend to work in different industries. Furthermore, women tend to be underrepresented in leadership positions across various sectors, such as finance, engineering, and construction, leading to vertical gender segregation. Practical implications for addressing gender disparity, therefore, involve implementing strategies that promote gender equality in the workplace. Organizations operating in industries with a higher representation of women than men should consider implementing initiatives where women are given more autonomy and enhance a culture that supports and rewards innovative behaviors equally. Moreover, organizations in industries where gender distribution is more balanced should focus on fostering an inclusive work environment where men and women are given the same access to resources and career opportunities.

5.6 Implications for further research

Even though our thesis uncovered several intriguing results, some findings still need further research. The independent variables autonomy, job demand, work-life balance, weekly working hours, gender, and age in relation to both dependent variables, employee engagement and innovation, were the most intriguing findings that resulted from our analysis, as some of the results were inconclusive.

It is important to highlight the lack of previous research examining the correlation between these dependent and independent variables in Norway. When we developed the hypotheses for the thesis, we used existing literature and established certain links and assumptions between the variables. However, rejecting the hypotheses for these variables contradicted both the previous theory and our initial assumptions. Therefore, delving deeper into these areas would be valuable to gain a clear understanding of why the results deviated from the previous findings and literature. This suggests that there may be characteristics within the Norwegian working life

that differ from other countries, and it would be interesting to explore the underlying reasons for these distinctions.

Furthermore, another noteworthy predictor of our dependent variables is the innovation climate. Investigating this aspect further would provide a deeper understanding of how and why it impacts these variables. Furthermore, it is important to investigate the finding that employees who have a better work-life balance have higher levels of innovation and engagement. Understanding why this contradicts previous findings and identifying the factors that contribute to increased engagement among individuals with less work-life balance compared to those with a good balance would be particularly interesting. Additionally, our findings revealed that employees who work long hours have higher engagement and innovation levels, which contradicts most of the existing research on this topic. It would be valuable to understand why long hours contribute to increased engagement and innovation and explore the potential psychological effects on employees, such as burnout and stress.

6.0 Conclusion

This study provides valuable insights into the relationship between various factors and employee engagement and innovation in organizations. Most of our hypotheses on employee engagement were either confirmed or partially confirmed, highlighting the significance of these factors in shaping employee engagement. In conclusion, this study reveals that TL, autonomy, and appropriate levels of job demands at the organizational level contribute to higher levels of employee engagement and helps foster a culture of innovation. By encouraging a supportive environment, organizations can unleash the potential of their employees, leading to increased engagement and innovation outcomes. As all the independent variables positively predict employee engagement, except for age discrimination and emotional job demands, it opens an understanding of how to enhance employee engagement and innovative thinking by increasing these variables.

Moreover, innovation climate at the team level significantly influences employee engagement and innovation in organizations and is confirmed to be a positive predictor of both employee engagement and innovation. On the other hand, the relationship between age discrimination and employee engagement and innovation is only partially confirmed to be negative. This indicates that age discrimination in the workplace could somewhat hinder engagement and innovation in organizations. Notably, the hypotheses related to innovation were mostly rejected. This is likely due to the limited research on the specific relationship between the chosen independent variables and innovation outcomes. To fully understand the complicated dynamics of innovation and its relationships to TL, job demands, age discrimination, and innovation climate, it is suggested to conduct more research on the topic. This study also uncovered unexpected and intriguing results about the positive interactions between work-life balance, job demands, and stress levels with employee engagement as a positive predictor of innovation. These findings challenge commonly held assumptions and provide considerable details on the nature of innovation processes in organizations.

Finally, the findings confirm that employee engagement is positively related to innovation, meaning that their relationship moves in the same direction, emphasizing the importance of fostering engaged employees to drive innovative outcomes. The interactions between the chosen antecedent variables act as mediating factors, as they have been shown to influence both, and at least one of the dependent variables. This helps organizations understand how to

effectively utilize or implement these elements in real-world scenarios. Our findings suggest that finding the right balance, providing supportive resources, and effectively managing these factors can create an environment that fosters engagement and innovation among employees.

References

- A. Agarwal, U. (2014). Linking justice, trust and innovative work behaviour to work engagement. *Personnel review*, 43(1), 41-73
- Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of financial economics*, 94(2), 291-309.
- Afsar, B., & Umrani, W. A. (2020). Transformational leadership and innovative work behavior: The role of motivation to learn, task complexity and innovation climate. *European Journal of Innovation Management*, 23(3), 402-428.
- Afsar, B., & Umrani, W. A. (2020). Transformational leadership and innovative work behavior: The role of motivation to learn, task complexity and innovation climate. *European Journal of Innovation Management*, 23(3), 402-428.
- Agnete Alsos, G., Ljunggren, E., & Hytti, U. (2013). Gender and innovation: state of the art and a research agenda. *International Journal of gender and Entrepreneurship*, 5(3), 236-256.
- Al-Husseini, S., & El Beltagi, I. (2016). Transformational leadership and innovation: a comparison study between Iraq's public and private higher education. *Studies in Higher Education*, 41(1), 159-181.
- Al-Husseini, S., El Beltagi, I., & Moizer, J. (2021). Transformational leadership and innovation: the mediating role of knowledge sharing amongst higher education faculty. *International Journal of Leadership in Education*, 24(5), 670-693.
- Albort-Morant, G., Ariza-Montes, A., Leal-Rodríguez, A., & Giorgi, G. (2020). How does positive work-related stress affect the degree of innovation development?. *International Journal of Environmental Research and Public Health*, 17(2), 520.
- Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of management journal*, 39(5), 1154-1184.
- Amabile, T., & Kramer, S. (2011). The progress principle: Using small wins to ignite joy, engagement, and creativity at work. *Harvard Business Press*.
- Anderson, N., Potočnik, K., & Zhou, J. (2014). Innovation and creativity in organizations: A state-of-the-science review, prospective commentary, and guiding framework. *Journal of management*, 40(5), 1297-1333.
- Andriani, S., Kesumawati, N., & Kristiawan, M. (2018). The influence of the transformational leadership and work motivation on teachers performance. *International journal of scientific & technology research*, 7(7), 19-29.
- Anitha, J. (2014). Determinants of employee engagement and their impact on employee performance. *International journal of productivity and performance management*.

- Anthony-McMann, P. E., Ellinger, A. D., Astakhova, M., & Halbesleben, J. R. (2017). Exploring different operationalizations of employee engagement and their relationships with workplace stress and burnout. *Human Resource Development Quarterly*, 28(2), 163-195.
- Arifin, F., Troena, E., Djumahir, M., & Rahayu, M. (2014). Organizational culture, transformational leadership, work engagement and teacher's performance: Test of a model. *International Journal of Education and Research*, 2(1), 1-14.
- Arman, R., Wardi, Y., & Evanita, S. (2019, April). The effect of transformational leadership and motivation on employee performance. In 2nd Padang International Conference on Education, Economics, Business and Accounting (PICEEBA-2 2018) (pp. 759-767). *Atlantis Press*.
- Arshadi, N., & Damiri, H. (2013). The relationship of job stress with turnover intention and job performance: Moderating role of OBSE. *Procedia-Social and Behavioral Sciences*, 84, 706-710.
- Azizah, A., & Gustomo, A. (2015). The influence of employee engagement to employee performance at pt telkom bandung. *Journal of Business and Management*, 4(7), 817-829.
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of managerial psychology*, 22(3), 309-328.
- Banihani, M., Lewis, P., & Syed, J. (2013). Is work engagement gendered?. Gender in Management: *An International Journal*, 28(7), 400-423.
- Bannigan, K., & Watson, R. (2009). Reliability and validity in a nutshell. *Journal of clinical nursing*, 18(23), 3237-3243.
- Bass, B. M. (1999). Two decades of research and development in transformational leadership. *European journal of work and organizational psychology*, 8(1), 9-32.
- Bass, B. M., & Riggio, R. E. (2006). Transformational leadership. Psychology press.
- Bayl-Smith, P. H., & Griffin, B. (2014). Age discrimination in the workplace: Identifying as a late-career worker and its relationship with engagement and intended retirement age. *Journal of Applied Social Psychology*, 44(9), 588-599.
- Bertschek, I., & Meyer, J. (2010). IT is never too late for changes? Analysing the relationship between process innovation, IT and older workers. *Analysing the Relationship Between Process Innovation, IT and Older Workers*, 10-053.
- Bhatnagar, J. (2012). Management of innovation: Role of psychological empowerment, work engagement and turnover intention in the Indian context. *The International Journal of Human Resource Management*, 23(5), 928-951.
- Bhuvanaiah, T., & Raya, R. P. (2015). Mechanism of improved performance: Intrinsic motivation and employee engagement. *SCMS Journal of Indian Management*, 12(4),

- Bienertova-Vasku, J., Lenart, P., & Scheringer, M. (2020). Eustress and distress: neither good nor bad, but rather the same?. *BioEssays*, 42(7), 1900238.
- Bin, A. S., & Shmailan, A. (2015). The relationship between job satisfaction, job performance and employee engagement: An explorative study. *Issues in Business Management and Economics*, 4(1), 1-8
- Blackstone, A. (2018). Principles of sociological inquiry: Qualitative and quantitative methods. *Saylor Academy Open Textbooks*.
- Breevaart, K., Bakker, A., Hetland, J., Demerouti, E., Olsen, O. K., & Espevik, R. (2014). Daily transactional and transformational leadership and daily employee engagement. *Journal of occupational and organizational psychology*, 87(1), 138-157.
- Bunce, D., & West, M. (1994). Changing work environments: Innovative coping responses to occupational stress. *Work & Stress*, 8(4), 319-331.
- Burns, J. M. (1978). Leadership. NY: Harper & Row.
- Cai, W., Khapova, S., Bossink, B., Lysova, E., & Yuan, J. (2020). Optimizing employee creativity in the digital era: Uncovering the interactional effects of abilities, motivations, and opportunities. *International journal of environmental research and public health*, 17(3), 1038.
- Carless, S. A., Wearing, A. J. & Mann, L. (2000). A short measure of transformational leadership. *Journal of Business Psychology*, 14(3), 389-405.
- Carless, S. A., Wearing, A. J., & Mann, L. (2000). A short measure of transformational leadership. *Journal of business and psychology*, 14, 389-405.
- Çekmecelioğlu, H. G., & Günsel, A. (2011). Promoting creativity among employees of mature industries: The effects of autonomy and role stress on creative behaviors and job performance. *Procedia-Social and Behavioral Sciences*, 24, 889-895.
- Chan, K. B., Lai, G., Ko, Y. C., & Boey, K. W. (2000). Work stress among six professional groups: The Singapore experience. *Social science & medicine*, 50(10), 1415-1432.
- Cohen, S. & Williamson, G. M. (1988). Perceived stress in a probability sample of the United States. In Spacapan, S., & Oskamp, S. (Eds.), *The social psychology of health* (pp.31-67). Newbury Park: Sage.
- D'Amato, A., & Herzfeldt, R. (2008). Learning orientation, organizational commitment and talent retention across generations: A study of European managers. *Journal of Managerial Psychology*, 23(8), 929-953.
- Dalen, H. B., & Bye, L. S. (2020). Levekårsundersøkelsen om arbeidsmiljø 2019. Dokumentasjon. Notater 2020/26. Oslo: Statistisk sentralbyrå.
- Daoud, J. I. (2017, December). Multicollinearity and regression analysis. *In Journal of*

Physics: Conference Series (Vol. 949, No. 1, p. 012009). IOP Publishing.

- De Spiegelaere, S., Van Gyes, G., & Van Hootehem, G. (2016). Not all autonomy is the same. Different dimensions of job autonomy and their relation to work engagement & innovative work behavior. *Human Factors and Ergonomics in Manufacturing & Service Industries*, 26(4), 515-527.
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2000). A model of burnout and life satisfaction amongst nurses. *Journal of advanced nursing*, 32(2), 454-464.
- Dhir, S., & Shukla, A. (2018). The influence of personal and organisational characteristics on employee engagement and performance. *International Journal of Management Concepts and Philosophy*, 11(2), 117-131.
- Dinh, L. (2020). Determinants of employee engagement mediated by work-life balance and work stress. *Management Science Letters*, 10(4), 923-928.
- Elkins, T., & Keller, R. T. (2003). Leadership in research and development organizations: A literature review and conceptual framework. *The leadership quarterly*, 14(4-5), 587-606.
- Fidyah, D. N., & Setiawati, T. (2020). Influence of organizational culture and employee engagement on employee performance: job satisfaction as intervening variable. *Review of Integrative Business and Economics Research*, 9(4), 64-81.
- Fitzner, K. (2007). Reliability and validity a quick review. *The Diabetes Educator*, 33(5), 775-780.
- Foss, L., Woll, K., & Moilanen, M. (2013). Creativity and implementations of new ideas: Do organisational structure, work environment and gender matter?. *International Journal of Gender and Entrepreneurship*.
- Frosch, K. H. (2011). Workforce age and innovation: a literature survey. *International journal of management reviews*, 13(4), 414-430.
- Furunes, T., & Mykletun, R. J. (2010). Age discrimination in the workplace: Validation of the Nordic Age Discrimination Scale (NADS). *Scandinavian Journal of Psychology*, 51(1), 23-30.
- Garcia-Buades, E., Martinez-Tur, V., Ortiz-Bonin, S., & Peiro, J. M. (2016). Engaged teams deliver better service performance in innovation climates. *European Journal of Work and Organizational Psychology*, 25(4), 597-612.
- Gichohi, P. M. (2014). The role of employee engagement in revitalizing creativity and innovation at the workplace: A survey of selected libraries in Meru County-Kenya.
- Gogtay, N. J., & Thatte, U. M. (2017). Principles of correlation analysis. *Journal of the Association of Physicians of India*, 65(3), 78-81.

- Grawitch, M. J., Barber, L. K., & Kruger, M. L. (2010). Workload and work-to-family conflict: The mediating role of rumination. *Journal of Occupational Health Psychology, 15*(3), 246–258. doi: 10.1037/a0019404
- Gumusluoglu, L., & Ilsev, A. (2009). Transformational leadership, creativity, and organizational innovation. *Journal of business research, 62*(4), 461-473.
- Hackman, J. R., & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied psychology, 60*(2), 159.
- Halbesleben, J. R., & Buckley, M. R. (2004). Burnout in organizational life. *Journal of Management, 30*(6), 859-879.
- Honore, J. (2009). EMPLOYEE MOTIVATION. *Consortium Journal of Hospitality & Tourism, 14*(1).
- Hoogendoorn, S., Oosterbeek, H., & Van Praag, M. (2013). The impact of gender diversity on the performance of business teams: Evidence from a field experiment. *Management science, 59*(7), 1514-1528.
- Huang, J., Chen, L., & Wang, Y. (2020). The Impact of Work-Life Balance on Post-90s Young Employees on Innovative Behavior: Empirical Research Based on Three Cities in Shandong Province. *Journal of Open Innovation: Technology, Market, and Complexity, 6*(4), 135. doi: 10.3390/joitmc6040135
- Hughes, D. J., Lee, A., Tian, A. W., Newman, A., & Legood, A. (2018). Leadership, creativity, and innovation: A critical review and practical recommendations. *The Leadership Quarterly, 29*(5), 549-569
- Islam, R., & Ismail, A. Z. H. (2008). Employee motivation: A Malaysian perspective. *International Journal of Commerce and Management, 18*(4), 344-362.
- Jaharuddin, N. S., & Zainol, L. N. (2019). The impact of work-life balance on job engagement and turnover intention. *The South East Asian Journal of Management, 13*(1), 7.
- James, J. B., McKechnie, S., & Swanberg, J. (2011). Predicting employee engagement in an age-diverse retail workforce. *Journal of Organizational Behavior, 32*(2), 173-196.
- Janssen, O. (2004). How fairness perceptions make innovative behavior more or less stressful. *Journal of organizational behavior, 25*(2), 201-215.
- Jensen, K. W., Liu, Y., & Schøtt, T. (2017). Entrepreneurs innovation bringing job satisfaction, work-family balance, and life satisfaction: In China and around the world. *Chinese Management Studies, 11*(3), 583-595. doi: 10.1108/CMS-06-2017-0113
- Johnson, S. J., Machowski, S., Holdsworth, L., Kern, M., & Zapf, D. (2017). Age, emotion regulation strategies, burnout, and engagement in the service sector: Advantages of older workers. *Revista de Psicología del Trabajo y de las Organizaciones, 33*(3), 205-216.

- Kahn, K. B. (2018). Understanding innovation. *Business Horizons*, 61(3), 453-460.
- Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of management journal*, 33(4), 692-724.
- Kalliath, T., & Brough, P. (2008). Work–life balance: A review of the meaning of the balance construct. *Journal of management & organization*, 14(3), 323-327.
- Kang, J. H., Solomon, G. T., & Choi, D. Y. (2015). CEOs' leadership styles and managers' innovative behaviour: Investigation of intervening effects in an entrepreneurial context. *Journal of Management studies*, 52(4), 531-554.
- Karasek Jr, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 285-308.
- Karatepe, O. M., Yavas, U., Babakus, E., & Deitz, G. D. (2018). The effects of organizational and personal resources on stress, engagement, and job outcomes. *International Journal of Hospitality Management*, 74, 147-161.
- Kaufman, G., & Elder Jr, G. H. (2002). Revisiting age identity: A research note. *Journal of Aging Studies*, 16(2), 169-176
- Khalili, A. (2016). Linking transformational leadership, creativity, innovation, and innovation-supportive climate. *Management Decision*, 54(9), 2277-2293.
- Kim, N., & Kang, S. W. (2017). Older and more engaged: The mediating role of age-linked resources on work engagement. *Human Resource Management*, 56(5), 731-746.
- Ko, Y. J., & Choi, J. N. (2019). Overtime work as the antecedent of employee satisfaction, firm productivity, and innovation. *Journal of Organizational Behavior*, 40(3), 282-295.
- Koffi, M. (2021). Innovative ideas and gender inequality (No. 35). Working Paper Series.
- Korsakienė, R., Raišienė, A. G., & Bužavaitė, M. (2017). Work engagement of older employees: do employee and work-related factors matter?. *Economics and sociology*, 151-161.
- Kunze, F., Boehm, S. A., & Bruch, H. (2021). It matters how old we feel in organizations: Testing a multilevel model of organizational subjective-age diversity on employee outcomes. *Journal of Organizational Behavior*, 42(4), 448-463
- Kunze, F., Raes, A. M., & Bruch, H. (2015). It matters how old you feel: Antecedents and performance consequences of average relative subjective age in organizations. *Journal of Applied Psychology*, 100(5), 1511.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer publishing company.

- Leithwood, K., & Jantzi, D. (2005). Transformational leadership. The essentials of school leadership, 31, 43.
- Levy, S. R., & Macdonald, J. L. (2016). Progress on understanding ageism. *Journal of Social Issues*, 72(1), 5-25.
- Lloyd, C., King, R., & Chenoweth, L. (2002). Social work, stress and burnout: A review. *Journal of mental health*, 11(3), 255-265.
- Lockwood, N. R. (2003). Work/life balance. Challenges and Solutions, SHRM Research, USA, 2(10).
- Loher, B. T., Noe, R. A., Moeller, N. L., & Fitzgerald, M. P. (1985). A meta-analysis of the relation of job characteristics to job satisfaction. *Journal of Applied Psychology*, 70(2), 280–289. <https://doi.org/10.1037/0021-9010.70.2.280>
- Luksyte, A., Unsworth, K. L., & Avery, D. R. (2018). Innovative work behavior and sex-based stereotypes: Examining sex differences in perceptions and evaluations of innovative work behavior. *Journal of Organizational Behavior*, 39(3), 292-305.
- Macdonald, J. L., & Levy, S. R. (2016). Ageism in the workplace: The role of psychosocial factors in predicting job satisfaction, commitment, and engagement. *Journal of Social Issues*, 72(1), 169-190.
- Macey, W. H., & Schneider, B. (2008). The meaning of employee engagement. *Industrial and organizational Psychology*, 1(1), 3-30.
- Markos, S., & Sridevi, M. S. (2010). Employee engagement: The key to improving performance. *International journal of business and management*, 5(12), 89.
- Martín-de Castro, G., Delgado-Verde, M., Navas-López, J. E., & Cruz-González, J. (2013). The moderating role of innovation culture in the relationship between knowledge assets and product innovation. *Technological Forecasting and Social Change*, 80(2), 351-363.
- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual review of psychology*, 52(1), 397-422.
- Masood, M., & Afsar, B. (2017). Transformational leadership and innovative work behavior among nursing staff. *Nursing inquiry*, 24(4), e12188.
- Matzler, K., Schwarz, E., Deutinger, N., & Harms, R. (2008). The relationship between transformational leadership, product innovation and performance in SMEs. *Journal of Small Business & Entrepreneurship*, 21(2), 139-151.
- McDowell, I., & Newell, C. (1996). A guide to rating scales and questionnaires. A guide to rating scales and questionnaires.

- McGowan, P., Redeker, C. L., Cooper, S. Y., & Greenan, K. (2012). Female entrepreneurship and the management of business and domestic roles: Motivations, expectations and realities. *Entrepreneurship & Regional Development*, 24(1-2), 53-72.
- McKay, D. (Ed.). (2008). Handbook of research methods in abnormal and clinical psychology. Sage.
- Menguc, B., Auh, S., Fisher, M., & Haddad, A. (2013). To be engaged or not to be engaged: The antecedents and consequences of service employee engagement. *Journal of business research*, 66(11), 2163-2170.
- Mohanan, M., Sequeira, A. H., & Kumar, M. S. (2012). Employee engagement and motivation: A case study. *KHOJ-Journal of Indian Management Research and Practices*.
- Newman, A., Round, H., Wang, S., & Mount, M. (2020). Innovation climate: A systematic review of the literature and agenda for future research. *Journal of Occupational and Organizational Psychology*, 93(1), 73-109.
- Ng, T. W., & Feldman, D. C. (2013). A meta-analysis of the relationships of age and tenure with innovation-related behaviour. *Journal of occupational and organizational psychology*, 86(4), 585-616.
- Ng, T. W., & Feldman, D. C. (2013). A meta-analysis of the relationships of age and tenure with innovation-related behaviour. *Journal of occupational and organizational psychology*, 86(4), 585-616.
- Notelaers, G., De Witte, H., Van Veldhoven, M. J. P. M., & Vermunt, J. K. (2007). Construction and validation of the short inventory to monitor psychosocial hazards. *Médecine du Travail et Ergonomie*, 44(1), 11-17.
- Nählinger, J. (2010). Where are all the female innovators?: Nurses as innovators in a public sector innovation project. *Journal of technology management & innovation*, 5(1), 13-29.
- Ochieng, P. A. (2009). An analysis of the strengths and limitation of qualitative and quantitative research paradigms. *Problems of Education in the 21st Century*, 13, 13.
- Oldham, G. R., & Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. *Academy of management journal*, 39(3), 607-634.
- Pahkin, P., Björklund, C., Mykletun, R. J., Furunes, T., Gard, G. & Lindström, K. (2008). User's guide for the QPSNordic-ADW. Nordic Questionnaire for Monitoring the Age Diverse Workforce. Copenhagen: Nordic Council of Ministers. TemaNord2008:504.
- Palmore, E. (2001). The ageism survey: First findings. *The gerontologist*, 41(5), 572-575.
- Pandita, S., & Singhal, R. (2017). The influence of employee engagement on the work-life balance of employees in the IT sector. *IUP Journal of Organizational Behavior*, 16(1), 38.

- Parasuraman, S., & Hansen, D. (1987). Coping with work stressors in nursing: Effects of adaptive versus maladaptive strategies. *Work and Occupations*, 14(1), 88-105.
- Patterson, M. G., West, M. A., Shackleton, V. J., Dawson, J. F., Lawthom, R., Maitlis, S., Robinson, D. L., & Wallace, A. M. (2005). Validating the organizational climate measure: links to managerial practices, productivity and innovation. *Journal of Organizational Behavior*, 26, 379–408. DOI: 10.1002/job.312
- Peterson, S. J., & Spiker, B. K. (2005). Establishing the positive contributory value of older workers:: A positive psychology perspective. *Organizational Dynamics*, 34(2), 153-167.
- Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The leadership quarterly*, 1(2), 107-142.
- Popa, S., Soto-Acosta, P., & Martinez-Conesa, I. (2017). Antecedents, moderators, and outcomes of innovation climate and open innovation: An empirical study in SMEs. *Technological Forecasting and Social Change*, 118, 134-142.
- Poutanen, S., & Kovalainen, A. (2013). Gendering innovation process in an industrial plant—revisiting tokenism, gender and innovation. *International Journal of Gender and Entrepreneurship*.
- Queirós, A., Faria, D., & Almeida, F. (2017). Strengths and limitations of qualitative and quantitative research methods. *European journal of education studies*.
- Ramamoorthy, N., Flood, P. C., Slattery, T., & Sardesai, R. (2005). Determinants of innovative work behaviour: Development and test of an integrated model. *Creativity and innovation management*, 14(2), 142-150.
- Rao, V. (2016). Innovation through employee engagement. *Asia Pacific Journal of Advanced Business and Social Studies*, 2(2), 337-345.
- Ree, E., & Wiig, S. (2020). Linking transformational leadership, patient safety culture and work engagement in home care services. *Nursing Open*, 7(1), 256-264.
- Roberts, P., & Priest, H. (2006). Reliability and validity in research. *Nursing standard*, 20(44), 41-46.
- Sabir, A. (2017). Motivation: Outstanding way to promote productivity in employees. *American Journal of Management Science and Engineering*, 2(3), 35-40.
- Saks, A. M., & Gruman, J. A. (2014). What do we really know about employee engagement?. *Human resource development quarterly*, 25(2), 155-182.
- Saleem, M., Tufail, M. W., Atta, A., & Asghar, S. (2015). Innovative workplace behavior, motivation level, and perceived stress among healthcare employees. *Pakistan Journal of Commerce and Social Sciences (PJCSS)*, 9(2), 438-446.

- Saxena, V., & Srivastava, R. K. (2015). Impact of employee engagement on employee performance—Case of manufacturing sectors. *International Journal of Management Research and Business Strategy*, 4(2), 139-174.
- Schaufeli, W. B. (2018). Work engagement in Europe: Relations with national economy, governance and culture. *Organizational Dynamics*, 47(2), 99-106.
- Schaufeli, W. B., Shimazu, A., Hakanen, J., Salanova, M., & De Witte, H. (2017). An ultra-short measure for work engagement. *European Journal of Psychological Assessment*.
- Schaufeli, W. B., Shimazu, A., Hakanen, J., Salanova, M., & De Witte, H. (2019). An ultra-short measure for work engagement: The UWES-3 validation across five countries. *European Journal of Psychological Assessment*, 35(4), 577-591.
- Schaufeli, W., & Salanova, M. (2011). Work engagement: On how to better catch a slippery concept. *European Journal of Work and Organizational Psychology*, 20(1), 39-46.
- Schubert, T., & Andersson, M. (2015). Old is gold? The effects of employee age on innovation and the moderating effects of employment turnover. *Economics of Innovation and New Technology*, 24(1-2), 95-113.
- Sendawula, K., Nakyejwe Kimuli, S., Bananuka, J., & Najjemba Muganga, G. (2018). Training, employee engagement and employee performance: Evidence from Uganda's health sector. *Cogent Business & Management*, 5(1), 1470891.
- Shahzadi, I., Javed, A., Pirzada, S. S., Nasreen, S., & Khanam, F. (2014). Impact of employee motivation on employee performance. *European Journal of Business and Management*, 6(23), 159-166.
- Shirom, A. (2003). The effects of work stress on health. *The handbook of work and health psychology*, 2, 63-82.
- Shukla, S., Adhikari, B., & Singh, V. (2015). Employee engagement-role of demographic variables and personality factors. *Amity global HRM review*, 5(9), 65-73.
- Sia, S. K., & Appu, A. V. (2015). Work autonomy and workplace creativity: Moderating role of task complexity. *Global Business Review*, 16(5), 772-784.
- Somech, A., & Drach-Zahavy, A. (2013). Translating team creativity to innovation implementation: The role of team composition and climate for innovation. *Journal of management*, 39(3), 684-708.
- Sonnentag, S., & Bayer, U. V. (2005). Switching off mentally: predictors and consequences of psychological detachment from work during off-job time. *Journal of occupational health psychology*, 10(4), 393.
- Steckler, A., McLeroy, K. R., Goodman, R. M., Bird, S. T., & McCormick, L. (1992). Toward integrating qualitative and quantitative methods: An introduction. *Health education quarterly*, 19(1), 1-8.

- Tampubolon, H. (2017). The relationship between employee engagement, job motivation, and job satisfaction towards the employee performance. *Corporate Ownership & Control*, 13(2), 473-477.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of medical education*, 2, 53.
- Thomas, K. W. (2009). *Intrinsic motivation at work: What really drives employee engagement*. Berrett-Koehler Publishers.
- Thompson, V. A. (1965). Bureaucracy and innovation. *Administrative science quarterly*, 1-20
- Van der Hulst, M., & Geurts, S. (2001). Associations between overtime and psychological health in high and low reward jobs. *Work and stress*, 15(3), 227-240.
- Van Yperen, N. W., & Hagedoorn, M. (2003). Do high job demands increase intrinsic motivation or fatigue or both? The role of job control and job social support. *Academy of Management Journal*, 46(3), 339-348.
- Vincent-Höper, S., Muser, C., & Janneck, M. (2012). Transformational leadership, work engagement, and occupational success. *Career development international*.
- Wasay, B. (2013). An investigation of the relationship between work-life balance and employee engagement. *Strategic HR Review*, 12(4).
- Watanabe, M., & Yamauchi, K. (2018). The effect of quality of overtime work on nurses' mental health and work engagement. *Journal of Nursing Management*, 26(6), 679-688.
- Winasis, S., Wildan, U., & Sutawidjaya, A. H. (2020, August). Impact of digital transformation on employee engagement influenced by work stress on Indonesian private banking sector. In *International Conference on Industrial Engineering and Operations Management*.
- Wood, G., Wilkinson, A., & Harcourt, M. (2008). Age discrimination and working life: Perspectives and contestations—a review of the contemporary literature. *International Journal of Management Reviews*, 10(4), 425-442.
- Wood, J., Oh, J., Park, J., & Kim, W. (2020). The relationship between work engagement and work-life balance in organizations: A review of the empirical research. *Human Resource Development Review*, 19(3), 240-262.
- World Health Organization. (2021). *Global report on ageism*. World Health Organization.
- Yeoh, K. K., & Mahmood, R. (2013). The relationship between pro-innovation organizational climate, leader-member exchange and innovative work behavior: A study among the knowledge workers of the knowledge intensive business services in Malaysia. *Business Management Dynamics*, 2(8), 15-30.

- Zastrow, C. (1984). Understanding and preventing burn-out. *The British Journal of Social Work, 14*(1), 141-155.
- Zhou, J. (1998). Feedback valence, feedback style, task autonomy, and achievement orientation: Interactive effects on creative performance. *Journal of Applied Psychology, 83*(2), 261–276. <https://doi.org/10.1037/0021-9010.83.2.261>

Appendix 1: Factor analysis

Employee engagement

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,683
Bartlett's Test of Sphericity	Approx. Chi-Square	1569,253
	df	3
	Sig.	,000

Component Matrix^a

	Component 1
Jeg er entusiastisk når det gjelder jobben min - Trivsel og arbeidsglede	,893
Jeg får mye energi på jobben - Trivsel og arbeidsglede	,848
Jeg er oppslukt av arbeidet mitt - Trivsel og arbeidsglede	,807
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

Innovation in organizations

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.928
Bartlett's Test of Sphericity	Approx. Chi-Square	9787.930
	df	36
	Sig.	.000

Component Matrix^a

	Component 1
Er med på å omgjøre nye ideer til nyttige løsninger - Hvor ofte gjør du dette?	.855
Hjelper til med å få nøkkelpersoner til å verdsette nye ideer - Hvor ofte gjør du dette?	.839
Er med og samler støtte for nye ideer - Hvor ofte gjør du dette?	.837
Bidrar til systematisk innføring av nye ideer i arbeidsmiljøet - Hvor ofte gjør du dette?	.836
Hjelper til med å skape annerkjennelse for nye ideer - Hvor ofte gjør du dette?	.835
Er med på å vurdere nytteverdien av nye ideer - Hvor ofte gjør du dette?	.807
Tenker ut ideer for forbedringer på arbeids-plassen - Hvor ofte gjør du dette?	.767
Leter etter nye måter å utføre arbeidet på - Hvor ofte gjør du dette?	.757
Finner på originale løsninger på problem - Hvor ofte gjør du dette?	.712
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

Autonomy

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.753
Bartlett's Test of Sphericity	Approx. Chi-Square	1437,857
	df	6
	Sig.	<,001

Component matrix

	Component 1
Kan du påvirke beslutninger som er viktige for ditt arbeid? - Hva og hvor mye kan du selv bestemme i arbeidet ditt?	,791
Kan du påvirke avgjørelser om hvilke personer du skal samarbeide med? - Hva og hvor mye kan du selv bestemme i arbeidet ditt?	,783
Kan du påvirke mengden av arbeid som blir tildelt deg? - Hva og hvor mye kan du selv bestemme i arbeidet ditt?	,756
Hvis det finnes flere forskjellige måter å utføre arbeidet ditt på, kan du selv velge hvilken framgangsmåte du skal bruke? - Hva og hvor mye kan du selv bestemme i arbeidet ditt?	,725

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

Job demand

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.836
Bartlett's Test of Sphericity	Approx. Chi-Square	6915.388
	df	78
	Sig.	.000

Component Matrix^a

	Component			
	1	2	3	4
Er arbeidet ditt belastende ut fra et følelsesmessig synspunkt? - Hvilke krav stiller jobben din til deg?	.699	-.490		

Stilles du i arbeidet ditt overfor hendelser som påvirker deg personlig? - Hvilke krav stiller jobben din til deg?	.679	-548
Fører arbeidet ditt til følelsesladde situasjoner? - Hvilke krav stiller jobben din til deg?	.663	-591
Har du for mye å gjøre? - Hvilke krav stiller jobben din til deg?	.663	-435
Krever ditt arbeid kompliserte avgjørelser? - Hvilke krav stiller jobben din til deg?	.650	
Er det nødvendig å arbeide i et høyt tempo? - Hvilke krav stiller jobben din til deg?	.650	-491
Krever arbeidet ditt raske avgjørelser? - Hvilke krav stiller jobben din til deg?	.638	
Er arbeidsoppgavene dine for vanskelige for deg? - Hvilke krav stiller jobben din til deg?	.575	
Er arbeidsbelastningen din ujevn slik at arbeidet hopper seg opp? - Hvilke krav stiller jobben din til deg?	.567	
Krever jobben din at du lærer deg nye kunnskaper og nye ferdigheter? - Hvilke krav stiller jobben din til deg?	.505	.472
Utfører du arbeidsoppgaver som du trenger mer opplæring for å gjøre? - Hvilke krav stiller jobben din til deg?	.478	.416

Er dine spesialkunnskaper og ferdigheter nyttige i arbeidet ditt? - Hvilke krav stiller jobben din til deg?		.618
Krever arbeidet ditt maksimal oppmerksomhet? - Hvilke krav stiller jobben din til deg?	.463	.551
Extraction Method: Principal Component Analysis. a. 4 components extracted.		

Age discrimination

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,859
Bartlett's Test of Sphericity	Approx. Chi-Square	3289,202
	df	15
	Sig.	,000

Component Matrix^a

	Component 1
Eldre får sjeldnere enn sine yngre medarbeidere være med på samtaler om videreutvikling / egen karriere / kurs med leder	,852
Eldre får sjeldnere være med på kurs og opplæring i arbeidstida	,818
Yngre arbeidstakere blir foretrukket når ny teknologi (nye maskiner), aktiviteter eller arbeidsmåter skal innføres	,737
Eldre forbigås ved forfremmelse og intern rekruttering	,735

Det forventes ikke at eldre medarbeidere skal være med på omstilling, endringer og nye arbeidsmåter i samme grad som de yngre	,678
Eldre stopper mer opp i lønnsøkning enn hva yngre medarbeidere gjør	,642

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Innovation climate

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.928
Bartlett's Test of Sphericity	Approx. Chi-Square
	9787.930
	df
	36
	Sig.
	.000

Component Matrix^a

	Component 1
Er med på å omgjøre nye ideer til nyttige løsninger - Hvor ofte gjør du dette?	.855
Hjelper til med å få nøkkelpersoner til å verdsette nye ideer - Hvor ofte gjør du dette?	.839
Er med og samler støtte for nye ideer - Hvor ofte gjør du dette?	.837
Bidrar til systematisk innføring av nye ideer i arbeidsmiljøet - Hvor ofte gjør du dette?	.836
Hjelper til med å skape anerkjennelse for nye ideer - Hvor ofte gjør du dette?	.835
Er med på å vurdere nytteverdien av nye ideer - Hvor ofte gjør du dette?	.807

Tenker ut ideer for forbedringer på arbeids-plassen - Hvor ofte gjør du dette?	.767
Leter etter nye måter å utføre arbeidet på - Hvor ofte gjør du dette?	.757
Finner på originale løsninger på problem - Hvor ofte gjør du dette?	.712

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Stress-level

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.689
Bartlett's Test of Sphericity	Approx. Chi-Square	1831,549
	df	3
	Sig.	,000

Component Matrix^a

	Component
	1
Føler du for tiden slikt stress i arbeidet ditt? - Med stress menes en tilstand hvor man kjenner seg spent, rastløs, nervøs eller engstelig eller har vanskelig for å sove på grunn av problemer som stadig opptar tankene.	,802
Har du en opplevelse av at du ikke har kontroll over viktige ting i livet ditt?	,887
Har du en opplevelse av at vanskelige ting hoper seg opp slik at du ikke kan mestre dem?	,897

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Work-life balance

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.708
Bartlett's Test of Sphericity	Approx. Chi-Square	1191.101
	df	6
	Sig.	<.001

Component Matrix^a

	Component 1
Hender det at kravene på jobben forstyrrer ditt hjemmeliv og familieliv? - Hvor ofte synes du at arbeidet ditt påvirker fritiden din og omvendt?	.795
Hvor ofte blir du kontaktet hjemme per telefon av noen fra arbeidsplassen din utenom arbeidstid, om noe knyttet til arbeidet ditt? - Hvor ofte synes du at arbeidet ditt påvirker fritiden din og omvendt?	.753
Hvor ofte leser og svarer du på arbeidsrelatert e-post utenom arbeidstid? - Hvor ofte synes du at arbeidet ditt påvirker fritiden din og omvendt?	.744
Hender det at krav fra familien eller ektefelle/partner forstyrrer utførelsen av arbeidet ditt? - Hvor ofte synes du at arbeidet ditt påvirker fritiden din og omvendt?	.648

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Appendix 2: Reliability

Employee engagement

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.81	.81	3

Innovation in organizations

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.93	.93	9

Autonomy

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.76	.76	4

Emotional job demands

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.88	.88	3

Workload job demands

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.76	.76	3

Skills job demands

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.65	.65	3

Special competence job demands

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.66	.66	4

Age discrimination

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.84	.84	6

Innovation climate

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.67	.67	4

Stress level

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.83	.83	3

Work-life balance

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.70	.70	3
