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What encourages innovative work behavior at a firm-level?

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Abstract

This thesis aims to determine what positively influences innovative work behavior and answering the research question, “*What encourages innovative work behavior at a firm-level?*”. Based on a literature review and research findings, we found that organizational climate, employability, job demands, effort-reward fairness, and work engagement were expected to have a positive impact on IWB. To be able to test the relationship between these variables and IWB, we collected data through a questionnaire with already validated measurements from previous research. The questionnaire was sent to 401 employees at Haugaland kraft, and the final sample consisted of 123 employees. Analysis of the data demonstrated that several variables were correlated with IWB, which were: educational level, humanitarian- and economical background, regulative & normative, anticipation and optimization, occupational expertise & corporate sense, personal flexibility, and job demands. The final regression model reveals that all the variables that are included explain 44,5% (***) of the variance in IWB. The results indicate that all educational backgrounds, regulative & normative (organizational climate), anticipation and optimization (employability), and a high level of job demands have a positive impact on innovative work behavior. The main predictor is employability, which explaining 22,1% (***) of the variance in IWB, while organizational climate and job demands explain 6,5% (*) and 5,3% (***), respectively. Based on the results, it shows that management can encourage IWB by rules and policies (regulative), which might influence whether employees experience that contributing towards innovation is highly valued (normative). Further, the result anticipation and optimization indicate that employees who continuously develop their competencies and can apply their newly acquired knowledge and skills are encouraging IWB. The result of job demands is in line with previous research findings, which shows that a high level of job demands is a trigger for IWB. Thus, we conclude that organizational climate (regulative & normative), employability (anticipation & optimization), and a high level of job demands encourage innovative work behavior at Haugaland Kraft.

Keywords: Innovative work behavior, organizational climate, innovation and flexibility, the three pillars: regulative, normative, and cognitive, psychological safety, employability, job demands, effort-reward fairness, and work engagement.

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Abbreviations

IWB – Innovative work behavior

WE – Work engagement

PS – Psychological safety

OC– Organizational climate

1. Introduction

In today's rapidly changing economy, the significance of innovation increases, and is one of the biggest drive forces of the twenty-first century. The reason is that the customer's needs and preferences are changing promptly, in line with the competitor's products and services. Increased competition urges businesses to innovate at a faster pace, to be able to secure a competitive position in a rapidly increasing globalization. The competition and customer expectations have also resulted in higher importance of the digitalization of current services and practices. Simultaneously, digitization is expanding opportunities for businesses. In addition to the escalated competition, the surroundings of businesses are expecting more sustainable solutions, especially concerning environmental issues. Like many other businesses, the research object, Haugaland Kraft, faces all these expectations and concerns and must innovate to stay relevant in the future. Haugaland Kraft is a medium-sized power company in Norway, which distributes power, broadband-, and alarm services to private and corporate customers. The company is characterized as traditional and has existed for over 110 years.

In order to meet these expectations and being able to innovate, the firm must encourage their employees to utilize their capabilities, as innovation occurs by merging knowledge and skills that are possessed by employees. That means, to be able "*to improve production processes and to develop new products and services, innovative work behaviour of employees is vital*" (Stoffers, Van der Heijden & Jacobs, 2018, p. 2). Innovative work behavior involves all behaviors that contribute towards innovation, such as the production of new ideas and solutions, and have been defined as "*...the intentional creation introduction and application of new ideas within a work role, group or organization in order to benefit role performance, the group, or the organization*" (Janssen, 2000, p. 288). Thus, innovative work behavior (IWB) is the foundation of innovation blooms at a firm-level (Kanter, 1988), and this research will investigate what positively influences IWB. Therefore, this thesis aims to answer the following research question:

"What encourages innovative work behavior at a firm-level?"

In order to answer the research question, we will investigate what influences IWB positively by using quantitative research strategy and collecting primary data through questionnaire. Based on previous research findings, we are expecting that organizational climate, employability, job demands, effort-reward fairness, and work engagement will encourage IWB. Organizational climate is "*...the recurring patterns of behaviour, attitudes and feelings that characterize life in the organization*" (Tidd & Bessant, 2014, p. 72), and is expected to be influential on IWB as it is a determinant for all behaviors in an organization (Garcia-Garcia, Ramos, Serrano, Cobos, and Souza, 2011). Since many aspects can describe the climate, we have focused on aspects that are predicted to have an impact on IWB, which are innovation and flexibility, the three pillars, and psychological safety (Montani, Odoardi & Battistelli, 2014; Åmo, 2006; Sharifirad, 2013). Employability is defined as "*the continuous fulfilling, acquiring or creating of work through the optimal use of competence*" (Van der Heijde & Van der Heijden, 2005, p. 143), and are expected to be positively related to IWB (Stoffers et al., 2018), as innovation occurs by combining knowledge and skills that the employees possess. A high level of job demands is predicted to be a trigger for IWB (Janssen, 2000; Bunce & West, 1994), and describes the total of work requirements to the employee. Further, effort-reward fairness involves whether the employee perceives fairness in effort spent and rewards and that a high level of effort-reward fairness is encouraging IWB (Janssen, 2000). Lastly, work engagement is presented as a positive predictor of IWB (Siddiqi, 2015), as WE "*...describes employees' ability to bring their full capacity to solving problems, connecting with people, and developing innovation services.*" (Bakker & Leiter, 2010, p. 2).

Innovative work behavior has been examined by many different researchers and angles. However, few have tried to find a more holistic view of IWB. Thus, our specific model is unique, as it includes: organizational climate, employability, job demands, effort-reward fairness, and work engagement, which no one has tried to investigate at once. Therefore, this thesis will contribute towards an increase in knowledge within the different concepts and their relation to IWB. But at the same time, this thesis will also contribute to extending the research about what encourages innovative work behavior at a firm level. Hopefully, this can also motivate and inspire future research within these different concepts in relation to IWB. The main results of this thesis are that organizational climate (regulative & normative), employability (anticipation & optimization), and a high level of job demands is encouraging innovative work behavior. In addition, the model is explaining 44,5% (***) of the variance in innovative work behavior, including all the control variables and concepts.

This thesis consists of 5 chapters. In the next chapter, the theoretical framework is presented, as well as previous research findings on the relationship between the variables and IWB. More specifically, we are looking into different variables that are expected to encourage innovative work behavior. Chapter 3 involves this thesis research methodology and includes the choices in research approach, strategy, and data collection, etc. Next, chapter 4 presents the data and results, as well as discussion of the results in subchapter 4.2. Chapter four also offers practical and theoretical implications, as well as the limitations of this thesis. Finally, chapter 5 presents the conclusion of the research question: *What encourages innovative work behavior at a firm-level?*

2. Theoretical framework

In order to answer the research question: “*What encourages innovative work behavior at a firm-level?*”, it is necessary to review relevant theory and research findings. Thus, this chapter will present those theoretical concepts that are expected to have a positive influence on innovative work behavior.

Innovation and different types of innovation are presented first, along with why innovation is important. The next subchapter will introduce the object of this research, innovative work behavior, and its three discontinuous tasks: idea generation, promotion, and realization (Janssen, 2000). Subsequently, organizational climate, employability, job demands, and effort-reward fairness will be presented respectively, which all are predicted to be positively related to IWB. This chapter ends with a presentation of work engagement, and the prediction is that engaged employees will demonstrate IWB to a larger degree than employees without WE.

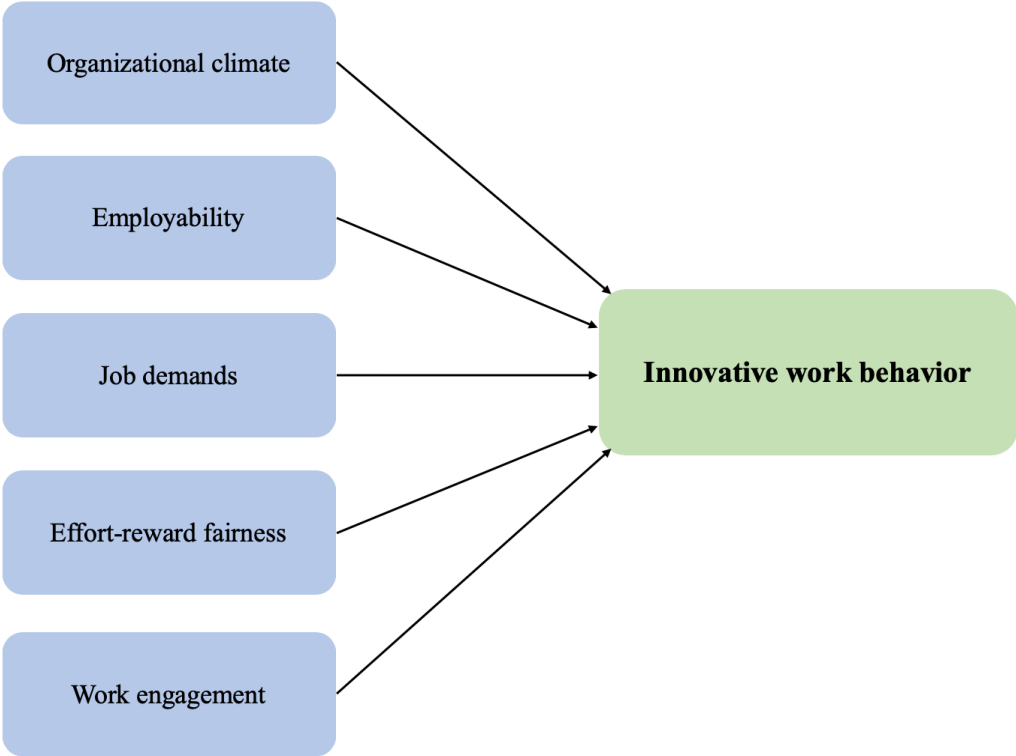


Figure 1 - Predicted model of what encourages IWB

2.1 Innovation

In recent years, the concept of innovation has received more attention from scholars and different disciplines (Fagerberg, 2005), and has resulted in several definitions. For instance, Runco, Pritzker, and Pritzker (2011) define innovation as solving a problem using creativity. The solution can be either completely new or improvement of existing innovation. The most common for all definitions is that innovation involves the implementation of a new or improved product, process, or methods, etc., which creates value for customers, organizations, and society (Gault, 2016; Kesting & Ulhøi, 2010; Tidd & Bessant; 2014).

Tidd and Bessant (2014) view innovation as the process of turning ideas into value. Innovation as a process consists of four discontinuous stages: (1) idea generation, (2) coalition building, (3) idea realization, and (4) transfer/diffusion (Kanter, 1988). The process starts ordinarily with someone who recognizes an opportunity or gets a valuable idea. Thereafter, the idea or opportunity must be sold to potential allies. Thus, the opportunity can enter the next stage; (3) idea realization. These first three stages have behavioral tasks that IWB consists of, and that will be discussed further in subchapter 2.2.



Figure 2 - *The innovation process (Kanter, 1988)*

Different types of innovation

Innovation is about identifying new opportunities, social needs, improvements in processes, and finding new markets (Bessant & Tidd, 2015). According to Schumpeter (1934), innovation can be divided into five different categories, which are: “... *new products* [and services], *new methods of production* [and processes], *new sources of supply*, *the exploitation of new markets*, and *new ways to organize business*” (Fagerberg, 2005, pp. 6-7). In each category, there are a set of different ways to innovate. For instance, new methods of production can include changes in how products are created or changes in how they are delivered to customers. A part of the category “Exploitation of new markets” is marketing

innovation. For instance, that involves changes in product labels or new strategies for attracting new target groups (Gault, 2016).

Additionally, to these categories, innovation can be viewed as a dimension between incremental and radical innovations, as illustrated in figure 3. According to Tidd and Bessant (2014), incremental is about “*doing what we do better*” (p. 6) and involves improvements of existing products, services, processes, and methods, etc. Continuous improvements can result in radical innovation, which is characterized as breakthrough innovation (Davila & Epstein, 2014), or groundbreaking new technology within one or several innovation categories. The latter is associated with higher risks than incremental due to uncertainty and complexity. Therefore, radical innovations often require a higher level of expertise and more teamwork between several specialties than incremental innovations do.

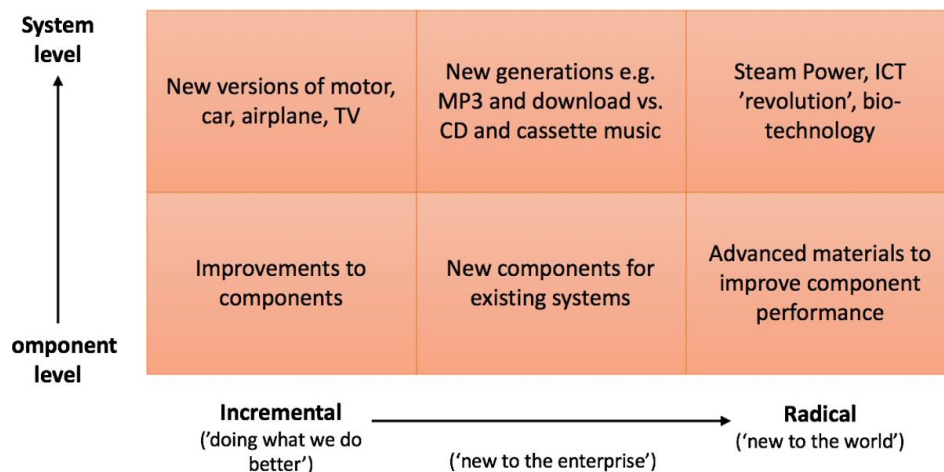


Figure 3 - *The dimensions between incremental and radical innovations*
(Tidd & Bessant, 2014, p. 6)

Why is innovation important?

Innovation is crucial for any organization, as it increases the probability of sustaining business operations in a rapidly changing economy (Dahlin, 2014). Billett (2012) also emphasizes that innovations “... *have important purposes in sustaining the validity of enterprises in the face of continual change in work requirements and clients need*” (p. 93). Due to increased globalization, it forces businesses to develop at a faster pace to ensure a competitive position (Gorodnichenko, Svejnar, & Terrell, 2010; Mumford, 2000). Increased competition also leads to profit margins to decrease, and firms are dependent on producing their products and

services at a lower rate to secure economic growth. As successful innovations result in economic growth, competitive advantages, survival in a rapidly changing economy, and attract skillful employees, innovation is a necessity (Keupp, Palmié & Gassmann, 2012). These benefits can be viewed as repercussions of each other, where one leads to another (e.g., economic growth and survival), as illustrated in figure 4. By viewing these outcomes of successful innovations, it can be argued that innovation performance can explain the firm’s performance.

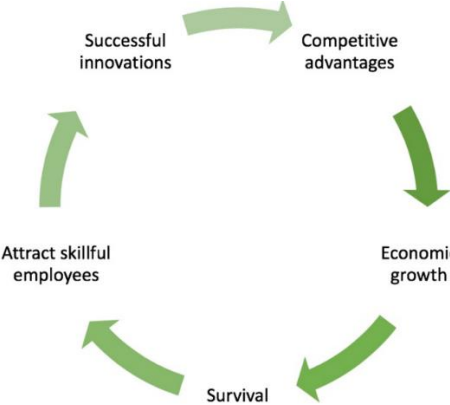


Figure 4 - A chain reaction of successful innovations

Most innovations take place in firms and often occurs by combining new and existing knowledge, skills, capabilities, and resources (Fagerberg, 2005). That means the firm’s innovative capabilities are dependent on its intellectual property (Stoffers et al., 2018). A part of the intellectual property is the employee’s competencies and productive behaviors. Therefore, innovative work behavior is suggested to be enhancing a firm’s innovative abilities and results (De Jong & Den Hartog, 2010).

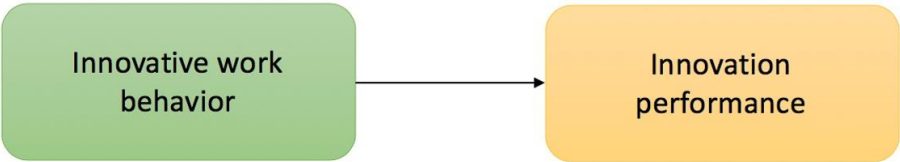


Figure 5 - A suggested outcome of IWB

2.2 Innovative work behavior (IWB)

Several studies have described innovative work behavior as a beneficial extra-role behavior, which creates value and improves the firm's performance (Janssen, 2000; De Jong & Den Hartog, 2010; Stoffers et al., 2018). IWB reflects all behaviors regarding the production of new ideas or exploration of new opportunities, as well as implementing them, and is defined as "...*the intentional creation introduction and application of new ideas within a work role, group or organization in order to benefit role performance, the group, or the organization*" (Janssen, 2000, p. 288). Furthermore, having employees who demonstrate IWB is a great competitive advantage. In that sense, it is difficult for others to imitate or copy another firm's human capital, which consists of the employee's knowledge, personal attributes, and skills (Roos, Von Krogh & Roos, 2010). Also, IWB is essential for a firm's innovative capabilities and results. Thus, firms should strive to encourage their employees to exhibit this beneficial behavior.

Innovative work behavior consists of three discontinuous behavioral tasks, which are (1) idea generation, (2) idea promotion, and (3) idea realization (Janssen, 2000). The behavioral tasks are related to the first 3 stages of the innovation process and are carried out at the micro-level by individuals (Kanter, 1988). "*These microprocesses are in turn stimulated, facilitated, and enhanced - or the opposite - by a set of macro-level conditions*" (Kanter, 2000, p. 167).

However, it must be emphasized that these behavioral tasks are not restricted to a specific group of employees (Stoffers et al., 2018; Patterson, Kerrin, Gatto-Roissard & Coan, 2009). That means all employees can contribute towards innovation at any stage of the process. For example, one of the most important innovation activators is customer or user contact. Therefore, employees at customer service can be crucial resources in the innovation process, as well as employees in innovation-oriented positions (Kanter, 1988).

(1) *Idea generation* involves all behavioral tasks where someone generates new ideas or discovers new opportunities, which usually starts the innovation process (Kanter, 1988). New ideas and opportunities often emerge from identifying work-related problems, new customer needs, or new trends in the market (Janssen, 2000). In fact, "... *innovation triggers come in all shapes and sizes and from all sorts of directions*" (Tidd & Bessant, 2014, p. 83). Thus, idea generation is about someone recognizes an opportunity to innovate. However, it must be emphasized that new ideas can surface later in the process, as it is characterized as

discontinuous. For example, the employees who are implementing the idea might produce new ideas about how to make the original idea even better. Therefore, these behavioral tasks are discontinuous activities, and “... *individuals can be expected to be involved in any combination of these behaviors at any time*” (Scott & Bruce, 1994, p. 582).



Figure 6 - *The three discontinuous behavioral tasks*

The next stage is to mobilize support for the idea or opportunity. (2) *Idea promotion* is associated with all tasks that involve selling the idea to key personnel (e.g., management, colleagues). If the idea is characterized as complex, this behavioral task has greater importance. That is, due to the magnitude of resources needed to complete the innovation. Furthermore, idea promotion includes tasks as mobilizing support and resources, as well as influence and negotiate with management or other key people (Kanter, 1988; Janssen, 2000). Thus, idea promotion is about making potential allies, such as the firm's stakeholders or other important organizational members, enthusiastic about the opportunity. However, this is not necessarily easy to do, as the innovation process is characterized as controversial and uncertain and involves a lot of risk-taking by implementing the idea. If the potential allies are considering the idea as valuable, it might enter the next stage. (3) *Idea realization* concerns all implementation tasks. That is, carrying the idea into reality, or something tangible (e.g., prototype) that can be transferred to users or customers (Kanter, 1988).

What encourages innovative work behavior is a complex question, considering that IWB is influenced by a set of comprehensive factors at a macro-level (Kanter, 1988), and a micro-level. Therefore, this research will focus on factors that are expected to have a significant impact on IWB. One of them being the organizational climate, which is one of the most important determinants regarding behavior (Garcia-Garcia et al., 2011). The organizational climate will be discussed further in the next subchapter. Other factors that are expected to be significant in relation to IWB are employability, job demands, effort-reward fairness, and work engagement. These factors will be explored subsequently in this chapter.

2.3 Organizational climate

Organizational climate influences both individual and group behavior to a large extent and are one of the most important determinants regarding behavior in organizations (Garcia-Garcia et al., 2011). It is important to distinguish between organizational climate and culture, although both concepts have similarities. While culture reflects the organization's shared values and norms, the climate is defined as "...the recurring patterns of behaviour, attitudes and feelings that characterize life in the organization." (Tidd & Bessant, 2014, p. 72). According to Patterson et al. (2005), by examining the organization's norms and values, "...can help explain the employees' perceptions of the climate" (p. 381). Therefore, this research will also explore cultural characteristics in addition to climate. As the organizational climate is influential on behaviors, the climate is expected to have a positive impact on the beneficial extra-role behavior, IWB, as well. Thus, the hypothesis is:

Hypothesis 1: There is a positive relationship between organizational climate and IWB.

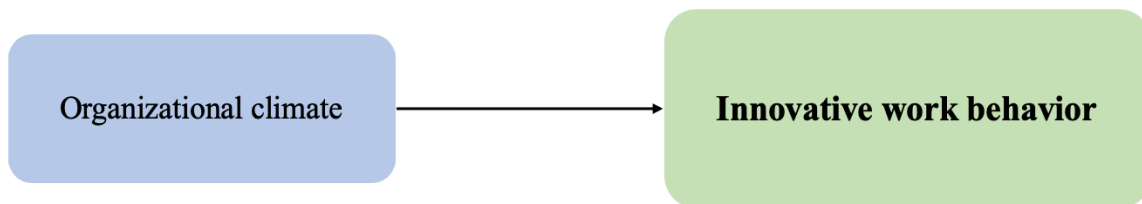


Figure 7 - *Organizational climate is predicted to be positively related to IWB*

It must be determined what characterize an organizational climate that is positively related to innovation and IWB to address this hypothesis. Many terms and elements can describe an organizational climate. One of them being innovation and flexibility, which has been used as the psychological climate for innovation by Montani et al., (2014), and will be discussed in the next subsection. Subsequently, the three pillars of institutions and psychological safety will be presented. Psychological safety is an element of the climate, that is expected to be influential on innovative work behavior. That is, employees that experience a safe environment for sharing their ideas and opinions are more likely to exhibit IWB.

2.3.1 Innovation and flexibility

Flexibility and adaptability are two vital characteristics of the climate that is expected to influence the firm's innovative performance. That is, today's economy is changing rapidly. Hence innovation is dependent on dynamic capabilities within the organization (Lazonick, 2005). Dynamic capabilities are "...the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments." (Teece, Pisano & Shuen, 1997, p. 516). A part of dynamic capabilities is flexibility. The former has been proven to have an impact on the innovative performance of the firm (Friis, Holmgren, and Eskildsen, 2016). Thus, it is interesting to see whether this also affects IWB.

Patterson et al., (2005) have developed and validated measurements of organizational climate, where one of the climate dimensions is innovation and flexibility. The dimension is measuring if the climate is perceived as capable of redirect the course of action when needed. Innovation and flexibility have been used to measure the psychological climate for innovation by Montani et al., (2014). Psychological climate for innovation is described as behavioral practices that encourage innovative initiatives in the workplace and quick to do things differently. For example, the work environment is perceived as supportive of change-oriented activities, and new ideas are readily accepted by others (e.g., leaders). According to their findings, there is a correlation between innovation and flexibility and IWB, therefore included in our model. Even though the dimension was not statistically significant in the regression model in Montani et al., (2014) research, it appeared to have an indirect effect on IWB together with other variables. Since the relationship between innovation and flexibility and IWB has limited empirical evidence and has not been tested along with variables such as employability, job demands, effort-reward fairness, and work engagement, it is reasonable to check it. Also, the assessment is that a climate that is characterized as resistant against new ideas, would not encourage the employees to exhibit IWB. On the contrary, if the employees experience that ideas are appreciated in their work environment, they will be more motivated to promote and carry out their ideas. Thus, the following sub-hypothesis is proposed:

Sub-hypothesis 1a: In an organization where the climate is perceived as flexible, the employees will report higher levels of innovative work behavior

2.3.2 The three pillars of institutions; Regulative, cognitive, and normative

The three pillars; regulative, cognitive, and normative, are considered as a social framework of an institution, which all together constructs the climate within an organization (Scott, 2001). These pillars are the foundation of social behavior in society and influence the conduct with legal (*regulative*), cultural (*cognitive*), and moral (*normative*) constraints. These institutional systems have the power to encourage and support behaviors that are considered beneficial. According to Åmo (2006) findings, all three dimensions were statistically significant with innovative work behavior. Therefore, it is expected that the 3 institutional systems have a substantial impact on the desirable extra-role behavior, IWB. The empirical evidence is limited, due to no one have tested the relationship between the three pillars and IWB besides Åmo (2006), to our knowledge.

The regulative pillar is about how organizations constrain and regularize behavior (Scott, 2001), by a set of rules, monitoring systems, sanctioning activities, and governance policies (Busenitz, Gómez & Spencer, 2000). The regulative system aims to coerce the members to exhibit acceptable behavior by rewards and punishments. In this study, the regulatory dimension measures to what degree the management facilitates and supports initiatives towards innovation or new approaches to a problem. That is because the management level in an organization is the main actor for formal rule-setting and sanctions for the employees (Åmo, 2006; Scott, 2001). Therefore, the management level can encourage innovative work behavior with the firm's regulative system. It leads to the following sub-hypothesis:

Sub-hypothesis 1b: In an organization where the management facilitates and encourages innovation initiatives, the employees will report higher levels of innovative work behavior.

The cognitive pillar is about "... *the shared conceptions that constitute the nature of social reality and frames through which meaning is made*" (Scott, 2001, p. 57). This pillar is culturally supported, and the members of the community have shared logic of behavior. Regarding innovation, the cognitive dimension represents the knowledge society within an organization (Åmo, 2006; Busenitz et al., 2000). It is suggested that the dimension reflects the institution's members assembled knowledge and skills, which is crucial for the firm's innovative capabilities. In this research, the cognitive dimension measures to what degree the employees possess the necessary knowledge and skills to innovate or seize an opportunity. The anticipation is that where the employees have shared understandings of how to start and

run innovation projects is encouraging IWB. Hence, that leads to the following sub-hypothesis:

Sub-hypothesis 1c: In an organization where the employees possess the necessary knowledge and skills to innovate, the employees will report higher levels of innovative work behavior

The normative pillar reflects the organization's norms and values, and are forceful constraints on social behavior (Scott, 2001). Norms are the unspoken rules about what is appropriate and expected conduct in a specific environment (Jacobsen & Thorsvik, 2013). Values are the shared beliefs of what is desirable or preferred. For example, creative thinking is highly valued in some environments, yet in other societies, this is not appreciated. In fact, norms and values can apply to selected types of actors in an organization, while others apply to all members (Scott, 2001). For instance, firms that have a department which serves the purpose of innovating (e.g., R&D), it can result in expectations that they are the only ones who are supposed to innovate. All members can contribute towards innovation, regardless of their position. Therefore, the normative dimension measures to what degree the firm and its member's value and respect employees that contribute to innovation. It is expected that a firm which, in general, value creative and innovative thinking, is more likely to be encouraging innovative work behavior among all members (Busenitz et al., 2000). Thus, it leads to the following sub-hypothesis:

Sub-hypothesis 1d: In an organization where contributing to innovation is highly valued, the employees will report higher levels of innovative work behavior.

2.3.3 Psychological safety (PS)

Psychological safety is about “...*interpersonal trust and mutual respect in which people are comfortable being themselves*” (Edmondson, 1999, p. 354), and that the employees collectively perceive the work environment as safe for interpersonal risk-taking. PS is a crucial element of the organizational climate, especially when it comes to initiating change or proposing a new solution to a problem. The reason is that employees who execute the three behavioral tasks, idea generation, promotion, and realization, are subject to interpersonal risks (Edmondson, 1999; Javed, Naqvi, Khan, Arjoon & Tayyeb, 2019). For instance, the

employees' risk being viewed as troublemakers by others (e.g., leaders) for shedding light on a problem or being seen as incompetent because an idea fails when implemented. And the employees might silence themselves to be spared from rejection, punishment, and embarrassment, which discourages creative endeavors, such as IWB. That is if the psychological safety is absent in the work environment. In contrast, if the employees experience psychological safety, the employees will more likely promote their ideas and be active participants in the innovation processes.

Previous studies have found that psychological safety has positive effects on creative behavior, such as IWB (Javed et al., 2019; Kark & Carmeli, 2009; Gong, Cheung, Wang & Huang, 2012). According to Javed et al., (2019), psychological safety is motivating employees to generate, promote, and implement new ideas in the organization. That is supported by the research of Sharifirad (2013) and Wang, Leung, and Zhou (2014), which found that the relationship between psychological safety and IWB was statistically significant at $p\text{-value} < 0.05$ and $p\text{-value} < 0.01$, respectively. With this in mind, PS is expected to be encouraging IWB, and leads to the following sub-hypothesis:

Sub-hypothesis 1e: In an organization where there is a high level of psychological safety, the employees will report higher levels of innovative work behavior.

2.4 Employability

The firm's ability to innovate is dependent on their human capital and how they exploit knowledge resources (Stoffers et al., 2018). Employability reflects the employee's general and professional competencies. It has been defined as "*the continuous fulfilling, acquiring or creating of work through the optimal use of competence*" (Van der Heijde & Van der Heijden, 2005, p. 143). These competencies include the individual's personality, abilities, motivation, and attitudes. As innovation occurs by combining knowledge and skills, the employee's competencies are a determinant of the firm's innovative performance. Hence, innovative initiatives and tasks depend on the employee's knowledge, skills, and expertise. That means, to be able to generate, promote, and implement innovation, the employees must have capabilities to assimilate their newly acquired knowledge and apply it to new areas of work. Therefore, employability is expected to be an important determinant for employees to

demonstrate IWB. The prediction is that there is a positive relationship between a high degree of employability and IWB. Thus, this leads to the following hypothesis:

Hypothesis 2: There is a positive relationship between a high level of employability and IWB.

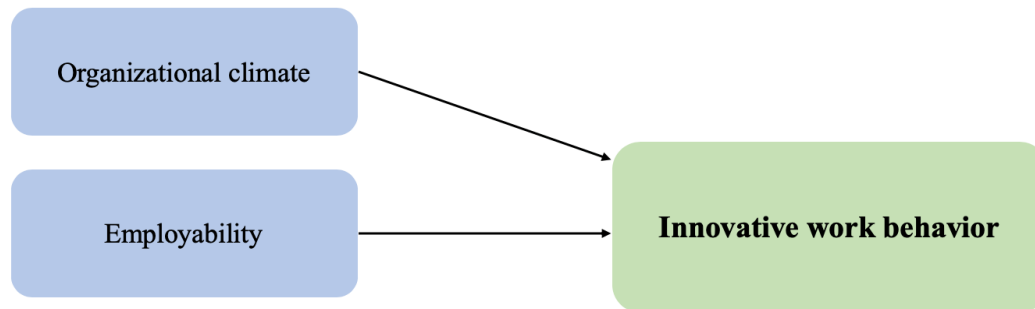


Figure 8 - *Employability is predicted to be positively related to IWB*

Employability has been conceptualized by 5 dimensions, which are (1) occupational expertise, (2) anticipation and optimization, (3) personal flexibility, (4) corporate sense, and (5) balance (Van Der Heijde & Van Der Heijden, 2006). (1) *Occupational expertise* consists of the individual's professional competencies and describes the individual's in-depth knowledge and skills. (2) *Anticipation and optimization* are about preparing for potential changes in future work, and therefore continuously develop own knowledge and skills "... *in order to strive for the best possible job and career outcomes*" (Van der Heijde & Van der Heijde, 2006, p. 454). The dimension anticipation and optimization are essential for innovation capabilities because individuals and "... *firms cannot rely on past experience since this has little relevance to current or future problems.*" (Kesting & Ulhøi, 2010, p. 68). The third dimension (3) *personal flexibility* relates to how well the employee can adapt to various changes in their work environment, both internally and externally. Adaptability is crucial for innovating in a rapidly changing economy, and the dimension personal flexibility should be influential on innovative work behavior. (4) *Corporate sense* refers to the employee's commitment to the organization by identifying with the firm's goals and values and sharing responsibilities with their co-workers. Without the desire to achieving the firm's goals, it might seem meaningless to contribute towards innovation, which is suggested to enhance business performance. The last and fifth dimension (5) *balance* is about balancing between work and private interests, as well as balancing between employers' and employees' interests.

If any of these interests is out of balance, it will ultimately affect one's performance, both daily work and innovative tasks. In such case, the latter will probably be given less priority.

Employability has been studied from different angles and disciplines, such as psychology, business management, career theory, and human resources management (Van der Heijde & Van der Heijden, 2006). Few studies have tried to integrate employability with different perspectives and explains why few have studied the interplay between employability and innovative work behavior. According to Stoffers et al., (2018), there is no empirical research that has investigated the relationship between IWB and employability, besides them. They have examined how employability influences the three discontinuous behavioral tasks. The results show that only one dimension of employability affects all three behavioral tasks, which is corporate sense. The employee's commitment to the organization is interpreted as the most important determinant that influences IWB. Further, the findings imply that anticipation and optimization is statistically significant for the last behavioral task, idea realization. It leads to the following sub-hypotheses:

Sub-hypothesis 2a: Employees who report a high level of Anticipation and Optimization will report a high level of innovative work behavior.

Sub-hypothesis 2b: Employees who report a high level of Corporate sense will report a high level of innovative work behavior.

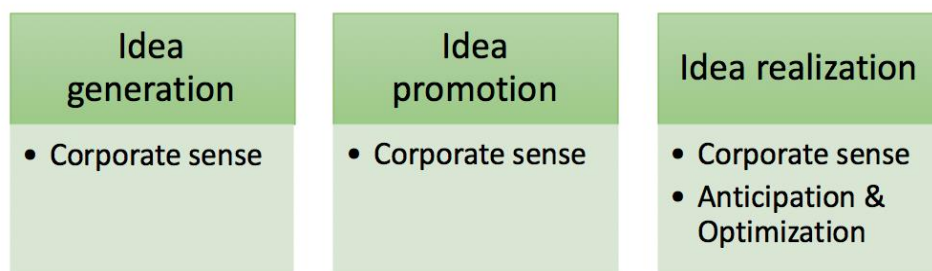


Figure 9 - Stoffers et al., (2018) findings

That means (1) Occupational expertise, (3) personal flexibility, and (5) balance has not been proven to have positive effects on IWB in Stoffers et al., (2018) research. In fact, occupational expertise was statistically significant with a negative value, which means that this dimension is negatively related to IWB. A possible explanation that is provided by the researchers is

that, when an employee has a high degree of occupational expertise, it leads to functional fixation on their field of expertise. That is suggested to be a disadvantage in terms of innovation. However, since the relationship between employability and IWB has not been studied by others than Stoffers et al., (2018), the empirical evidence is limited. If we decided to exclude these three dimensions, we would not be able to support or decline Stoffers et al., (2018) findings. Therefore, the three dimensions are not excluded from this research.

2.5 Job demands

Job demands describe the employee's work requirements during an ordinary workday and how these requirements can be psychological stressors (Janssen, 2000). Dediu, Leka, and Jain (2018) describe a high level of job demands as working under conditions with long hours, high speed, and time pressure. Thus, if the employees must work fast and hard, the difficulty level is too high, or the heavy workload is unbearable, it might result in anxiety or burn-out among the employees (Csikszentmihalyi, 1990). That is, if there is any mismatch between the employee's competencies and the difficulty level of the work, it can result in either anxiety or boredom, as illustrated in figure 10.

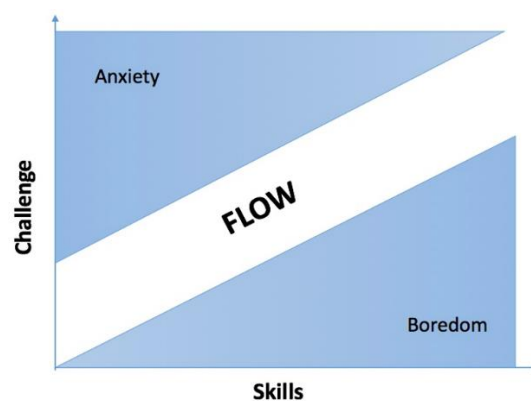


Figure 10 - *Flow-model* (Csikszentmihalyi, 1990)

However, one might think a high degree of job demands result in solely unfavorable outcomes, and it is suggested to be a trigger for innovative work behavior (Janssen, 2000; Bunce & West, 1994). The reason is that innovative activities can be an efficient way of coping with a high level of job demands by finding new ways to do things more effectively. Janssen (2000) states that IWB “... *may help the individual to improve his or her fit with higher job demands by generating, promoting, and realizing ideas for modifying oneself or the work environment.*” (p. 289). That is supported by several other researchers, that the relationship between job demands and IWB is statistically significant (Hernández, Salanova,

and Peiró, 2007; Dediu et al., 2018; De Spiegelaere, Van Gyes, Vandekerckhove & Hootegem, 2012). Thus, the following hypothesis is proposed:

Hypothesis 3: There is a positive relationship between a high degree of job demands and IWB.

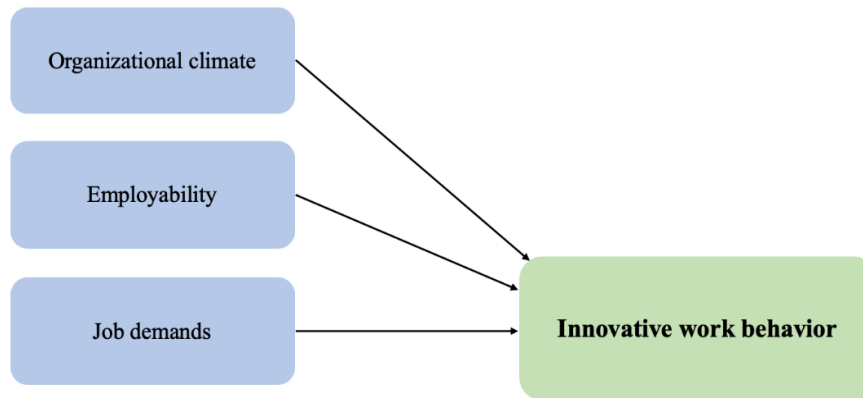


Figure 11 - *Job demands is predicted to be positively related to IWB*

Several researchers have studied job demands in relation to IWB. A study found a positive relationship between individual innovation and job demands if there is a high level of job resources available (Hernández et al., 2007). Dediu et al., (2018) results showed that high speed and time pressure was partially supported in relation to the two stages: idea generation and idea realization. Bunce and West (1994) have examined whether employees use innovation as a strategy to cope with occupational stress. The employees can innovate by finding new approaches to a problem, or new ways to solve ordinary tasks at a faster pace, to deal with a high level of job demands. The results show that innovation is an efficient way to cope with a high level of job demands, such as overwork, procedural difficulties, and dealing with others. Using innovation as a way of coping with stress at work can lead to enhanced knowledge and new skills learned, and among other beneficial outcomes:

... innovative coping might be intended to lead to benefits such as personal growth, increased satisfaction, improved group cohesiveness, better interpersonal communication, as well as improved performance. The definition also allows for an innovative coping response designed to benefit the group or organization and thereby the individual introducing it. Finally, the definition does not require absolute novelty of coping response, simply that the idea be new to the individual introducing it or to the group or organization (Bunce & West, 1994, p. 323).

2.6 Effort-reward fairness

Effort-reward fairness reflects what extent the employees perceive fairness in the economic or social exchange between employer and employees. Social exchange is suggested to be more facilitating for extra-role behaviors than economic, where the latter is a formal contract that specifies conditions of employment. Social exchange is about employee recognition and reciprocated trust and involves all unspecified obligations between parties. Janssen (2000) explains how social exchange can be encouraging innovative endeavors, by “*when efforts are fairly rewarded in such a social exchange relationship, employees are willing to reciprocate by discretionary behaviors like innovative activities that go beyond contractually determined job achievements.*” (p. 290).

Previous studies have researched effort-reward fairness as a mediator between job demands and IWB (Janssen, 2000), as well as a mediator between stress and IWB (Janssen, 2004). Janssen (2000) study finds that employees who believed they were fairly rewarded turned high job demands into innovative work behavior. In contrast, when the employees felt under-rewarded, they do not transform high job demands into innovative activities. Another study finds that the perception of a high level of effort-reward fairness had a positive effect on innovative work behavior when it was a mediator between IWB and another variable (Chang et al., 2011). Thus, effort-reward fairness has not been tested as a direct effect previously, to our knowledge. Therefore, we want to test the following hypothesis:

Hypothesis 4: There is a positive relationship between a high degree of effort-reward fairness and IWB.

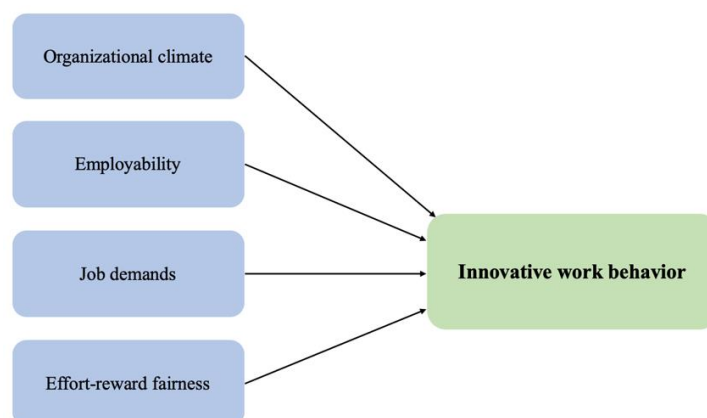


Figure 12 - *Effort-reward fairness is predicted to be positively related to IWB*

2.7 Work engagement (WE)

Engaged employees are a determinant for the firm's performance, as they "*... are more creative, more productive, and more willing to go the extra mile*" (Bakker & Demerouti, 2008, p. 1). Work engagement is a term that describes an employee's motivation, energy, and work-related well-being (Bakker & Leiter, 2010). WE also "*...describes employees' ability to bring their full capacity to solving problems, connecting with people, and developing innovation services.*" (Bakker & Leiter, 2010, p. 2). One might see how work engagement might positively influence IWB. Idea generation is about having the ability to identify problems and how to solve them, and idea promotion involve connecting with key organizational members. Idea realization concerns the development of innovation. Several other studies have found a positive relationship between work engagement and innovative work behavior (Siddiqi, 2015; Agarwal, 2014; Agarwal, Datta, Blake-Beard & Bhargava, 2012; De Spiegelaere et al., 2012; Wang et al., 2019). A study by Siddiqi (2015) found that all three dimensions of work engagement were positively related to IWB. Thus, the prediction is that work engagement is affecting the degree of IWB and leads to the following hypothesis:

Hypothesis 5: There is a positive relationship between a high degree of work engagement and IWB.

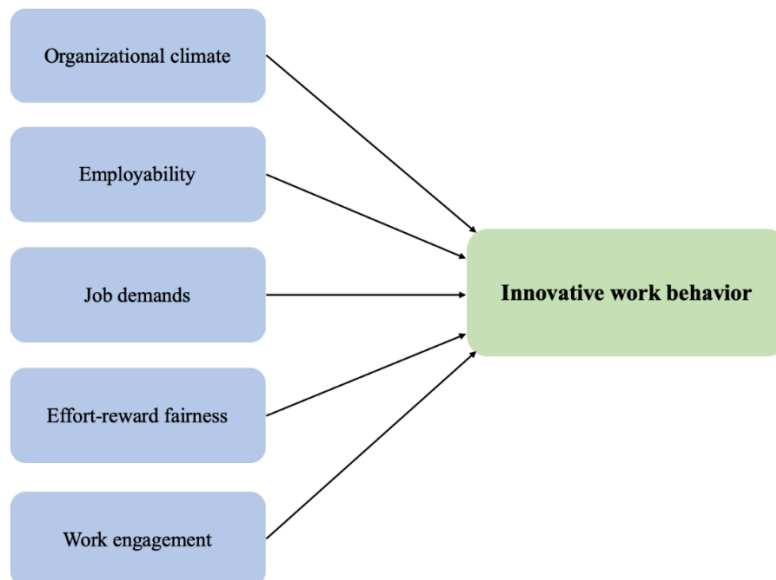


Figure 13 - *Work engagement is predicted to be positively related to IWB.*

Work engagement is conceptualized by three dimensions called (1) vigor, (2) dedication, and (3) absorption. *Vigor* involves a high level of energy and is about the employee's mental resilience, investment in effort, and persistence when changes and difficulties occur in their work. *Dedication* describes the employee's enjoyment of their work. Employees that have a strong dedication appreciate challenges and are inspired by their job. The last and third dimension is *absorption*, which describes employees that are highly focused on their tasks and have a hard time detaching themselves from their work. An employee who scores high on absorption often gets caught up on their work and forgets about their surroundings (Schaufeli, Bakker, & Salanova, 2006).

Engaged workers are better performers at work, more certainly results in improving the firm's overall performance. The reasons why engaged workers perform better is that they have positive emotions, good health, ability to mobilize resources, and crossover of engagement (Bakker & Demerouti, 2008). As well as, "*Engaged employees not only have the capacity to be energetic, they enthusiastically apply that energy into work. They do not hold back. They do not keep their energy reserve for something important; they accept that today's work deserves their energy*" (Bakker & Leiter, 2010, p. 2). Thus, having employees that are highly engaged in their work is very positive for the firm and the individuals.

2.8 Summary

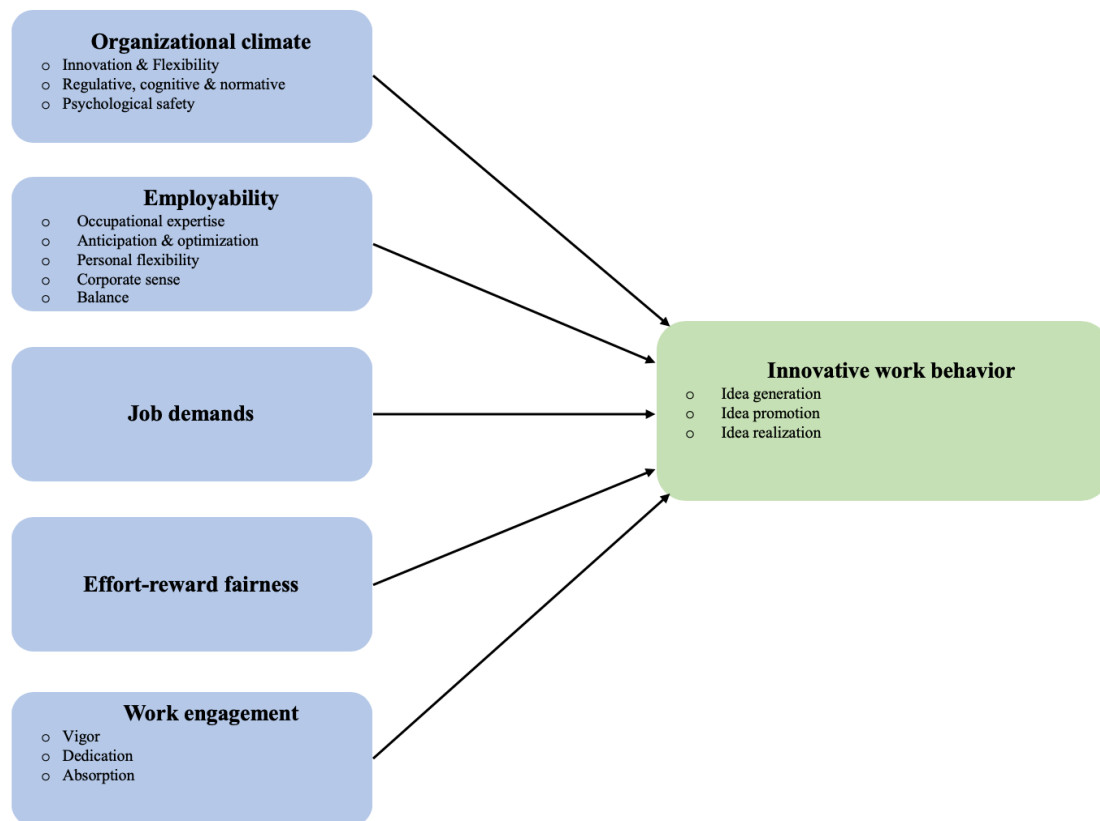


Figure 14 - Predicted model of what encourages IWB, including the dimensions.

During this chapter, we have explored variables that are predicted to be significant for encouraging innovative work behavior at a firm-level. As illustrated in figure 14, these variables are organizational climate, employability, job demands, effort-reward fairness, and work engagement. The first variable is organizational climate, which includes the dimensions: innovation and flexibility, the three pillars regulative, cognitive, and normative, and psychological safety. The prediction is that a climate will have a positive relationship with IWB. Employability involves the 5 dimensions, where anticipation and optimization and corporate sense is predicted to be more positive in relation to IWB. A high level of job demands is predicted to be a trigger for innovative activities. Also, if the employee perceives the exchange ratio between employee and employer as fair, they will reciprocate with a higher degree of IWB. The chapter ends with the prediction that the relationship between work engagement and IWB will be positively significant. All the hypotheses and sub-hypotheses are assembled into a table, as a recap before we go into the research methodology.

Hypotheses & Sub-hypotheses

There is a positive relationship between organizational climate and IWB

1. Organizational climate

1a: *In an organization where the climate is perceived as flexible, the employees will report higher levels of innovative work behavior.*

1b: *In an organization where the management facilitates and encourages innovation initiatives, the employees will report higher levels of innovative work behavior.*

1c: *In an organization where the employees possess the necessary knowledge and skills to innovate, the employees will report higher levels of innovative work behavior.*

1d: *In an organization where contributing to innovation is highly valued, the employees will report higher levels of innovative work behavior.*

1e: *In an organization where there is a high level of psychological safety, the employees will report higher levels of innovative work behavior.*

There is a positive relationship between a high level of employability and IWB.

2. Employability

2a: *Employees who report a high level of Anticipation and Optimization will report a high level of innovative work behavior.*

2b: *Employees who report a high level of Corporate sense will report a high level of innovative work behavior.*

3. Job demands

There is a positive relationship between a high degree of job demands and IWB.

4. Effort-reward fairness

There is a positive relationship between a high degree of effort-reward fairness and IWB.

5. Work engagement

There is a positive relationship between a high degree of work engagement and IWB.

Table 1 - *Hypotheses & Sub-hypotheses*

3. Methodology

This chapter will start with presenting the choices of research philosophy and approach, and subsequently, choices of research strategy and design, as well as the reasons why these were chosen. Then the data collection and analysis will be presented. The structure of this thesis and our research choices are illustrated in figure 15, which is based on the figure of Wilson (2014). All our research choices in: “...(1) *research philosophy*; (2) *research approach*; (3) *research strategy*; (4) *research design*; (5) *data collection* and (6) *data analysis techniques* - come together to form [our] *research methodology*” (Wilson, 2014, p. 7). Finally, the chapter ends with the ethics of this research.

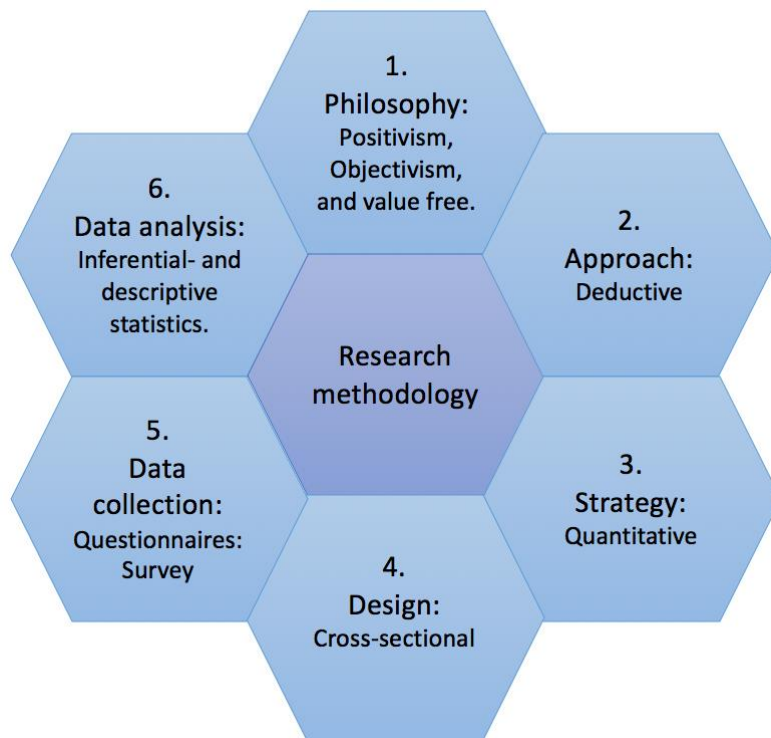


Figure 15 - *The honeycomb of research methodology, including our choices*

(Wilson, 2014).

The purpose of all these research choices, is to find the most suitable methodology for finding answers for the research question: “*What encourages innovative work behavior at a firm-level?*”. Which are emphasized by Krishnaswami and Satyaprasad (2010), “*research simply means a search for facts - answers to questions and solutions to problems*” (p. 2).

3.1 Research philosophies and approaches

Research philosophies

One of the main purposes of research philosophy, is to establish the researcher's role in the project, and how their views on what constitutes knowledge will impact the research process (Wilson, 2014). It also helps the researcher to decide which research strategy and design to adopt. Research philosophy is distinguished into three main types, which are epistemology, ontology, and axiology. Epistemology "... refers to the nature of knowledge, which means how we conceive our surroundings" (Wilson, 2014, p. 9), and asks the question 'What is acceptable knowledge?'. Further, epistemology is differentiated into three types: positivism, interpretivism, and pragmatism. The latter is a combination of positivism and interpretivism. Positivism refers to objectivity, where the researcher detaches himself/herself from its subjects. On the other hand, interpretivism is the opposite, where the researcher investigates a subject in-depth, and "... the researcher must enter the social world of what is being examined." (Wilson, 2014, p. 10). The positivism approach has been chosen to be the most optimal in this thesis to find what encourages innovative work behavior. Hopefully, this thesis will be able to contribute to finding universal answers to the research problem. Therefore, positivism philosophy comes naturally. The reason is that, when the goal is to find universal answers for a larger group, we cannot as researchers go into depth with subjects and their personal beliefs. Also, due to the time limitation, the pragmatism was excluded as an option.

Ontology is about "... how we perceive the social world" (Wilson, 2014, p. 11), and the researcher must decide "... whether you consider the world is external to social actors, or the perceptions and actions of social actors create social phenomena." (p. 11). These two perceptions are distinguished into two ontological stances, objectivism and subjectivism in respectively. Objectivism is being used in this thesis, where we view the world as external to the research subjects. We believe what influences innovative work behavior is partially out of the control of the subjects, for example, organizational climate. And also, objectivism is linked to positivism, which makes the choice come naturally.

Axiology reflects the nature of value (Wilson, 2014), where the researcher's perception also affects how the research is conducted. "*Your values play a role throughout the entire research process*" (Wilson, 2014, p. 12). Since we have chosen the positivism and objectivism approach, it comes naturally that our research process is 'value-free'. That is, we are outsiders

that are looking in, and do not involve with our subjects. When you choose interpretivism and subjectivism, your values play a bigger role. Therefore, if you choose to use these philosophies approaches, your research becomes 'biased'.

Research approaches

There are two main research approaches, which are inductive and deductive approach (Wilson, 2014). Inductive approach is a theory-building process, where the objective is to develop a new theory by observing phenomena. In other words, the researcher starts with collecting observations, or findings, and then perhaps develop a new theory, which figure 16 illustrate. On the contrary, the deductive approach begins with viewing theoretical concepts and literature and subsequently collecting data.

In this thesis, the deductive approach has been used. The main reason is that there is a lot of existing research and findings of the research object, innovative work behavior, as well as the other concepts organizational climate, employability, and job demands. However, to our knowledge, there is not any research that has tested our specific model previously. Therefore, we have reviewed the theoretical concepts separately against IWB. The other reason why the deductive approach is the opportunity to use already validated measurements from other researchers. Lastly, due to the risks associated with the inductive approach, as well as it is a time-consuming process, it was ruled out early on.

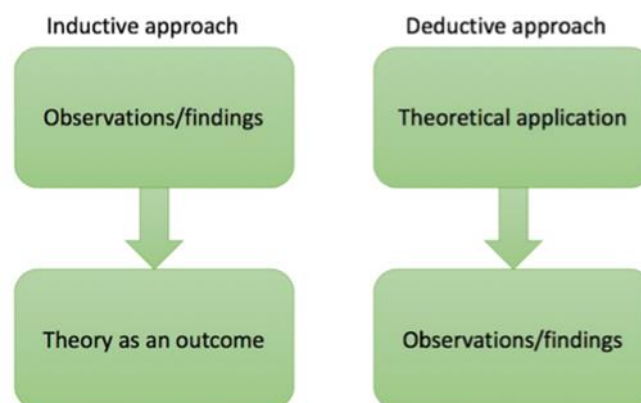


Figure 16 - *The two main research approaches, inductive and deductive*

(Wilson, 2014, p.13)

The choices in research philosophies and approaches have resulted in that the quantitative method is the most optimal research strategy (Wilson, 2014). The choices are assembled into table 2 before we go into the research strategy and design.

Epistemology	Ontology	Axiology	Research approach	Research strategy
Positivism	Objective	Value-free	Deductive	Quantitative

Table 2 - This thesis philosophies, approach, and strategy (Wilson, 2014).

3.2 Research strategy and design

Research strategy

There are three primary research strategies, which are qualitative, quantitative method, and multi-strategy, that consists of both methods. Qualitative method is based on non-numerical and narrative data, and is often conducted by interviews, observations, group sessions, etc. (Johannessen, Tuft & Christoffersen, 2011; Wilson, 2014). The purpose of the qualitative method is to collect more broad descriptions of the phenomenon and detecting more detailed data. One of the main limitations of the qualitative method is that the answers or conclusions do not reflect for a larger group. On the contrary, the quantitative research method involves a numerical analysis of relationships between variables, which can be generalized to a larger group (Wilson, 2014). Quantitative is often gathered through questionnaires or secondary data. Due to previous arguments and choices, the quantitative method has been chosen.

According to Hyde (2000), "*A quantitative approach to research might draw a large and representative sample from the population of interest, measure the behaviour and characteristics of the sample, and attempt to construct generalizations regarding the population as a whole*" (p. 84). Since this thesis aims to measure the behavior, IWB, and what influences it positively, and that we want to generalize a whole population, the quantitative approach is the most suitable strategy. The reason is that IWB is not restricted to a specific group in a firm. Thus, the quantitative strategy is optimal to find answers that reflect the entire group of employees in Haugaland Kraft. Further, we are interested in contributing to the research of IWB, using quantitative method might benefit future researchers regarding finding universal answers to what influences innovative work behavior in other businesses or industries.

Research design

The research design involves the plan, or framework, on how the research is conducted and its process (Wilson, 2014). This research started with brainstorming different research questions, and a qualitative pre-study inspired us in the direction of innovative work behavior. The pre-study and theoretical literature gave direction for what might be influential on innovative work behavior, and we landed on the research question, "*What encourages innovative work behavior at a firm-level?*". The next step was to find methods that would give us the most suitable answers to the research question and start the process of recruiting a firm that was willing to participate. The goal of this research was to get a holistic and objective view of what encourages IWB. Then the most suitable strategy was to have a quantitative method and survey approach. After extensive reading of theoretical concepts and previous discoveries from the pre-study, it resulted in our predicted model.

In this thesis, the cross-sectional design has been chosen due to the time frame that is given. The main difference between the two approaches cross-sectional and longitudinal design is that the latter involves collecting data several points of time of the same particular case. In contrast, cross-sectional is collected in one given time (Wilson, 2014). Longitudinal design requires a longer period, maybe years, than cross-sectional. The reason is that longitudinal serves the purpose of researching a phenomenon over time to see whether the variables and their relationship changes. That often requires measures taking place during the research, which is challenging to do in a short time, as well as we do not have access to implement these measures. In conclusion, cross-sectional is more suitable when we are interested in confirming or denying the correlations between variables, and the time-constraint for the whole project is six months.

3.3 Data collection

There are three data collection approaches, which are primary, secondary, or a combination of both (Wilson, 2014). Primary data means that the researcher has collected the data themselves, and can be collected by surveys, interviews, observations, etc. While secondary means data that is already collected by other researchers, and perhaps have been used to solve other problems than at hand (Sachdeva, 2008). In this thesis, we have only included primary data, which we have obtained by collecting data within Haugaland Kraft. Due to previous decisions regarding research philosophies, approach, strategy, and design, the most suitable data collection tool are questionnaires: survey. More specifically, we used an online survey

tool: SurveyMonkey, and had our contact within the company to send email to all employees with a link to the survey. Using a survey is efficient to perform on a larger group and for collecting objective data. Although, one of the disadvantages of using a survey instead of interviews, is that we cannot clarify the questions if something is unclear, etc. This can result in guessing or that they avoid answering these questions. Therefore, it was tested on several people in advance to figure out if the questions were clear enough and how long the survey will last.

3.3.1 Sampling

In this thesis, the population consists of 401 employees in six different departments, which includes all employees at any level in Haugaland Kraft. The proportion of men and women is 330 men (82,3%) and 71 women (17,7%). According to previous research and theory, innovative work behavior is not restricted to a specific group of employees in a firm (Stoffers et al., 2018; Kanter, 1988). All employees are equally likely to exhibit IWB, whether they are in innovation-oriented positions, or they are in customer service positions. Therefore, the population includes all employees, apprentices, middle-management, and management level in the firm.

Random sampling was used to find the sample from this population, which means all 401 employees had the same probability of participating (Weathington, Cunningham & Pittenger, 2012). The employees received an email about the survey on the same day, and it was also closed at the same time for all employees.

3.3.2 Measures

One of the advantages of choosing a deductive approach is that we could use already validated measurements. That means, by using previously validated measures, ensures that we are measuring what is intended to measure. Although, all items were modified and translated into Norwegian. The main reason is that the response rate would more likely increase if the participants received the survey in their native language. Translating the questions can affect the validity of the measurements. Thus, we tested the survey questions with 10-15 people, where these people would indicate if the questions were unclear, etc. That will be discussed further in 3.4.3 Reliability and validity, as well as 4.5 Limitations.

Innovative work behavior was measured by a 9-items scale from the study of Janssen (2000) based on Scott and Bruce's (1994), in which all nine items were included in the survey. The nine items are related to the three stages of the innovation process: idea generation, idea promotion, and idea realization. The survey includes items such as "*Create new ideas for difficult issues*" (idea generation), "*Mobilize support for innovative ideas*" (idea promotion), and "*Transform innovative ideas into useful applications*" (idea realization). Using a five-point rating scale, and the response format was ranged from (1) 'never' to (5) 'very often'.

The organizational climate was assessed with three scales, as it is expected to be the most important determinant for innovative work behavior. One of them being the 6-items scale innovation and flexibility, which is developed by Patterson et al. (2005). Four items were used in the survey, such as "*New ideas are readily accepted here*", and "*This company is quick to respond when changes need to be made*". The institutional pillars were measured by a 13-item scale developed by Busenitz et al. (2000), which have been customized from regional to firm-level by Åmo (2006). We chose to use 9-items, where regulative, cognitive, and normative were represented. Items that were included in the survey: "*The management at my workplace stimulate the employees to try new approaches towards problems*" (regulative), "*At my main employer, the employees know which ideas for development projects that will work out*" (cognitive), and "*Those who contribute toward organizational development are respected in my organization*" (normative). Psychological safety was measured by a 7-items scale developed by Edmondson (1999), where we used 4-items. Examples of which items were included: "*If you make a mistake, it is often held against you*", and "*No one would deliberately act in a way that undermines my efforts*". The response format in all scales was ranged from (1) 'disagree' to (5) 'agree' with a five-point rating scale.

Employability was measured by a 47-item scale developed by Van Der Heijde and Van Der Heijden (2006), where we chose to use 16 items. The five dimensions of employability are represented in the survey. The items that were included: "*I consider myself competent to engage in in-depth, specialist discussions in my job domain*" (occupational expertise), "*I am focused on continuously developing myself*" (anticipation and optimization), "*I adapt to developments within my organization*" (personal flexibility), "*I share my experience and knowledge with others*" (corporate sense), and "*I suffer from work-related stress*" (balance). Using a five-point rating scale, and the response format was ranged from (1) 'To a small extent' to (5) 'To a very great extent'.

Job demands was measured by an 8-items scale retrieved from Janssen (2000). Three items were included, which were: “*Do you have too much work to do?*”, “*Do you work under time pressure?*”, and “*Do you have problems with the workload?*”. The response format was ranged from (1) ‘never’ to (5) ‘very often’, with a five-point scale.

Effort-reward fairness was assessed by 6-items from Janssen (2000). Three items were included in the survey: “*I give a great deal of time and attention to the organization, but get very little appreciation*”, “*I put more energy into my job than it is worth*”, and “*I feel unfairly treated in my job*”. The response format was like job demands and IWB, which were ranged from (1) ‘never’ to (5) ‘very often’.

Work engagement was assessed with 9 modified items out of 17 items from the Utrecht Work Engagement Scale (Schaufeli et al., 2006). Example items are “*At my work, I am bursting with energy*” (vigor), “*My job inspires me*” (dedication), and “*I get carried away when I am working*” (absorption). Items were scored on a 5-point scale, ranging from (1) ‘never’ to (5) ‘always’.

3.3.3 Data collection tool

The survey begins with information and consent form, where the respondents must agree to participate before going any further. The first section of the survey (A) is general background information, which is the control variables, such as age, gender, highest educational degree, and work experience, etc. Most of the control variables have been categorized. Further, each section from B-F represents a variable, except section C work requirements, which includes both job demands and effort-reward fairness. In the last section G, the firm's innovation performance is reserved for middle-management and management. The subjects are asked to answer following two questions, “*To what extent has your company introduced something completely new to the company or significant improvement for the following categories: products & services, methods & processes, and marketing*”, and “*the extent to which these developments/improvements were new to the industry or new to the market*”, with a five-point scale (1) 'To a small extent' to (5) 'To a large extent'. (See appendix A for further information about the survey).

Section	Retrieved from	Title	# Questions
-	-	Information and consent form	Consent to participate
A	-	General background information	9
B	Van der Heijde & Van der Heijden (2006)	Competencies (<i>Employability</i>) 1. Occupational expertise 2. Anticipation and optimization 3. Personal flexibility 4. Corporate sense 5. Balance	3 3 3 4 3
C	Janssen (2000)	Work requirements 1. Job demands 2. Effort reward-fairness	3 3
D	Janssen (2000)	Innovation (<i>Innovative work behavior</i>) 1. Idea generation 2. Idea promotion 3. Idea realization	3 3 3
E	(1) Patterson et al. (2005) (2,3,4) Åmo (2006), based on Busenitz et al. (2000). (5) Edmondson (1999)	Organizational climate 1. Innovation & Flexibility 2. Regulative 3. Cognitive 4. Normative 5. Psychological safety	4 3 3 3 4
F	Schaufeli et al. (2006)	Motivation and job satisfaction (<i>Work engagement</i>) 1. Vigor 2. Absorption 3. Dedication	3 3 3
-	-	Responsibility <i>Do you have management responsibilities, yes or no? If no, the survey ends. If yes, the survey goes to section G</i>	1
G	-	The firm's innovation performance	2
			= 69 (-2)

Table 3 - Overview of questionnaires categories

3.4 Data analysis

There are mainly two data analysis procedures when using a quantitative method as a research strategy, namely, descriptive- and inferential statistics (Wilson, 2014). Descriptive statistics “... is used to summarize and describe data, while [inferential statistics] is used to make inferences in relation to a wider population.” (Wilson, 2014, p. 233). Both procedures have been adopted in this thesis. The descriptive procedure is used to describe our sample, the dependent variable, and work engagement. Inferential statistics are used to answer the research question “*What encourages innovative work behavior at a firm-level?*”, as we are testing how independent variables are affecting the dependent variable IWB. Several inferential methods have been adopted, such as Pearson’s product-moment correlation coefficient, chi-square test, and multiple regression. We analyzed our dataset in IBM SPSS Statistics software, due to how effortless it is to transfer data from SurveyMonkey to SPSS.

Most items in the survey were positive, except for effort-reward fairness. However, few dimensions had a negative or reversed statement that needed to be re-coded before the factor-analysis. That was statement 1 in the balance section “*I suffer from work-related stress*” and statement 2 in psychological safety “*If you make a mistake, it is often held against you*”. Also, educational level was reversed in SPSS, due to the lowest educational level was 7, and the Ph.D. was 1. Educational background was re-coded into three different groups, as it was possible to choose several backgrounds in the question. Lastly, gender was re-coded as a dummy variable, where 0 is a woman, and 1 is a man.

3.4.1 Sample

The final sample consisted of 123 employees, hence 103 men (83,7%) and 20 women (16,2%). 22 out of 123 respondents are in either middle-management or management positions. The response rate is 30,6% of the population. In addition to these 123 respondents, there were 25 responses in progress. That means the total was 148 respondents, which gives a completion rate of 83,1%. Hence, 253 people in the population passively declined to participate. More information about the sample will be provided in subchapter 4.1 Results.

3.4.2 Factor analysis

The purpose of factor analysis is to reduce variables into fewer factors, which ultimately simplifies the data material (Johannessen, 2009). Factor analysis is "*A set of statistical methods for analyzing the correlation among several variables in order to estimate the number of fundamental dimensions that underline the observed data and to describe and measure those dimensions*" (Porta, 2014, p. 107). In our questionnaire, we also collected data on the firm's innovative performance. The innovative performance of the firm has not been used in further analysis. The reason being that to answer these questions, one must be a leader, and there were only 22 respondents to these questions. Another reason is that it became one factor, and its reliability was too low.

Innovative work behavior

The first factor analysis consists of the dependent variable innovative work behavior. The Kaiser-Meyer-Olkin (KMO - *measure of sampling adequacy*) is a measure that indicates if the data is suitable for factor-analysis and is a value between 0 and 1 (Johannessen, 2009). It also measures bivariate correlations, where low KMO shows high level of bivariate correlations, and high KMO shows low level of bivariate correlations. According to Adams, Khan and Raeside (2014), a value below 0.5 is unacceptable, it should be at least 0.6 to be adequate. If the value is between 0.7 to 0.8 it is labeled as *middling*, and between 0.8 and 0.9 it is *meritorious*. A KMO value over 0.9 is classified as *marvelous*. Thus, when the KMO measures 0.889 for the variables of IWB, it is more than acceptable, and is suitable for factor-analysis.

Further, Bartlett's Test of Sphericity, must be statistically significant at 0.05 level to be accepted. Bartlett's Test of Sphericity tests null hypothesis that the correlations in the correlation matrix is unrelated and equal to null (Johannessen, 2009). To continue the factor-analysis, the null hypothesis must be rejected. Since the Bartlett's Test of Sphericity is 0.000 for IWB, the null hypothesis is rejected, and the factor-analysis can continue.

The purpose of measuring extraction communalities is to consider how much the extracted factors explain the variance in each variable (Johannessen, 2009). In other words, "*...the communality is a measure of the proportion of variance explained by the extracted factors.*" (Field, 2009, p. 637). For example, "Transform innovative ideas into useful applications" yields 0.734, which means the factor IWB explains 73,4% of the variance in this variable

(*idea realization*). A low value of extraction indicates that the variable is not suitable for the factor solution and might be dropped. Thus, it should be above 0.5 to be accepted. Although, a value below 0.5 can be accepted, if the reliability test yields the same value or higher, when the variable below 0.5 is included. All extractions for the variables of IWB were above 0.5, which is illustrated in table 4, thus all items were accepted for the factor IWB. The reliability test of the factor IWB yield 0.925, which is excellent. A value between 0.6-0.7 of Cronbach's Alpha is questionable, and a value below 0.6 should not be accepted.

“The eigenvalue of a factor represents the amount of the total variance explained by that factor” (Pallant, 2013, p. 191). The total of initial Eigenvalues shows that it is only one factor that have eigenvalues greater than 1, which results in that the 9 variables of IWB becomes one factor ($5.643 > 1$). Further, the factor IWB account for 62.7% of the variety in the 9 original variables. The component matrix shows how each variable correlates with the factor IWB (Johannessen, 2009), as illustrated in table 4 below. All 9 variables are above 0.7, which is excellent. If a variable score less than 0.4, then it should be dismissed.

Component matrix ^a	Component 1	Communalities	Mean	SD
<i>Innovative work behavior</i>				
Create new ideas for difficult issues	0.857	0.540	3.33	0.826
Search out new working methods, techniques, or instruments	0.825	0.556	3.49	0.935
Generate original solutions for problems	0.818	0.560	3.13	0.895
Mobilize support for innovative ideas	0.812	0.660	3.07	0.915
Acquire approval for innovative ideas	0.809	0.670	2.97	1.043
Making important organizational members enthusiastic for innovative ideas	0.768	0.655	2.90	0.978
Transform innovative ideas into useful applications	0.748	0.734	2.91	0.949
Introduce innovative ideas into the work environment in a systematic way	0.746	0.680	2.82	1.000
Evaluate the utility of innovative ideas	0.735	0.590	2.88	0.968
Eigenvalues	5.643			
% of variance	62.705			
Cumulative % of variance	62.705			
Cronbach's α	0.925			

Notes: $n = 123$, $KMO = 0.889$, $\chi^2 = 782, 688$, $df = 36$, $sig. = 000$

Table 4 - PCA analysis of IWB

Organizational climate

The next factor analysis was completed for the organizational climate. Regarding the theory we expected this dimension to be 5 different components. However, two of the variables turned into one factor. Thus, we ended up with four factors, which are innovation and flexibility, regulative and normative, cognitive and psychological safety. The tables are presented below, respectively.

Innovation and Flexibility

In the innovation and flexibility dimension all variables were used, meaning that they are all suitable for the factor solution, and all communalities were above 0.5. The KMO test yields 0.830, which is “*meritorious*”, and Bartlett’s test is statistically significant with a p-value < 0.001. Innovation and flexibility four variables turned into one factor, which was expected, and the Eigenvalue was 2.960. The one factor explains almost 74% of the variety of the original four variables. The Cronbach’s alpha α is 0.878, which is considered good and reliable.

Component Matrix^a	Component 1	Communalities	Mean	SD
<i>Innovation & flexibility</i>				
New ideas are readily accepted here.	0.868	0.754	3.21	1.090
This company is quick to respond when changes need to be made.	0.800	0.641	2.99	1.169
Assistance in developing new ideas is readily available.	0.871	0.759	3.04	1.006
People in this organization are always searching for new ways of looking at problems.	0.897	0.805	3.26	0.973
Eigenvalues	2.960			
% of variance	73.988			
Cumulative % of variance	73.988			
Cronbach’s	0.878			
Notes: $n = 123$, $KMO = 0.830$, $\chi^2 = 261,966$, $df = 6$, $sig. = 000$				

Table 5 - *PCA of Innovation and Flexibility*

Regulative, Cognitive, and Normative

All 9 extractions were above 0.5, thus all variables were included in the factor-analysis. The KMO was 0.797 and is statistically significant with p-value <0.001. These three dimensions turned into two factors, which is regulative & normative, and cognitive. The percentage of the variance explained is 50.3% and 22%, respectively, and these two factors together explains 72% of the variability in the original variables. Cronbach α yields 0.910 and 0.858, respectively.

Rotated component Matrix ^a	Component		Communalities	Mean	SD
	1	2			
<i>Regulative & Normative</i>					
The management stimulate the employees to take initiatives towards organizational developments (<i>innovation</i>).	0.852		0.745	3.34	1.158
The management stimulate the employees to try new approaches towards problems.	0.862		0.755	3.25	1.075
The management is financial supporting organizational developments (<i>innovation</i>) initiatives from the employees	0.759		0.576	3.25	0.971
In my organization, innovation is regarded as the “road toward success”.	0.749		0.620	3.25	1.105
Those who contribute toward organizational development (<i>innovation</i>) are respected in my organization.	0.843		0.732	3.30	1.124
To contribute toward organizational development (<i>innovation</i>) is a respected career move in my organization.	0.851		0.740	3.21	1.052
<i>Cognitive</i>					
The employees have the necessary competence to participate in development programs.		0.910	0.831		
The employees know which ideas for development projects that will work out.		0.909	0.845		
The employees know the procedures for carrying through development programs.		0.794	0.667		
Eigenvalues	4.529	1.982			
% of variance	50.318	22.027			
Cumulative % of variance	50.318	72.345			
Cronbach's	0.910	0.858			

Notes: n=123, KMO= 0.797, $\chi^2 = 789.535$, df = 36, sig. = 000

Table 6 - PCA of the three pillars; Regulative, Cognitive & Normative

Psychological safety

The last dimension within organizational climate were psychological safety. In this dimension, one variable has been removed, due to the extraction value was below 0.5. Also, when variable 2 “*If you make a mistake, it is often held against you*” was included, the last variable had a low value as well. As a result of removing variable 2, the extraction value for variable 4 increased. Also, variable 2 was reversed coded, which might be the reason it was not suitable in the factor analysis. The KMO yields 0.654 and is statistically significant with a p-value <0.001. The remaining variables turned into one factor, and the percentage of explained variance is 68.4%. The measure of psychological safety can be classified as reliable with a Cronbach's alpha α above 0.7.

Component matrix^a	Component 1	Communalities	Mean	SD
<i>Psychological safety</i>				
Members of this team are able to bring up problems and tough issues	0.874	0.763	4.06	0.997
I feel safe to take the risk of asking questions that challenge the status quo in my team	0.865	0.748	3.69	1.124
No one on this team would deliberately act, in a way that undermines my efforts.	0.735	0.540	3.62	1.155
Eigenvalues	2.051			
% of variance	68.382			
Cumulative % of variance	68.382			
Cronbach's	0.760			
Notes: $n = 123$, $KMO = 0.654$, $\chi^2 = 10.5,666$, $df = 3$, $sig. = 000$				

Table 7 - PCA of Psychological safety

Employability

Since employability have 5 dimensions, it was expected that we should have five factors. The factor-analysis resulted in three factors, where occupational expertise and corporate sense merged. Balance was removed all together, due to the component matrix became disturbed when this dimension was included. Also, the extraction value for the balance variables was not significantly high and was slightly above 0.5. After conducting several factors- and reliability analysis, the best combination was to remove the balance component and statement 2 from the occupational expertise from the analysis. This leads to three factors: anticipation and optimization, occupational expertise & corporate sense, and personal flexibility. These 3 factors together explain almost 63% of the variety of the original variables. The KMO test yield 0.846, which is satisfactory. Also, the p-value <0.001. The Cronbach's alpha for the three factors was 0.81, 0.71 and 0.8, respectively. Statement three from occupational expertise and statement four from corporate sense have extraction values under the limit of 0.5. Before removing these, we ran the reliability analysis to see how these statements affects the Cronbach's alpha α . The change was not significant enough, which is why we have decided to keep both variables in the analysis.

Rotated component matrix ^a	Component			Communalities	Mean	SD
	1	2	3			
<i>Anticipation & Optimization</i>						
How much time do you spend improving the knowledge and skills that will be of benefit to your work?	0.806			0.691	3.63	0.993
I am focused on continuously developing myself.	0.846			0.784	3.91	0.864
I consciously devote attention to applying my newly acquired knowledge and skills	0.805			0.66	4.13	0.746
<i>Occupational expertise</i>						
I consider myself competent to engage in in-depth, specialist discussions in my job domain.	0.494	0.556		0.563	4.30	0.860
How much confidence do you have in your capacities within your area of expertise?		0.688		0.486	4.13	0.705
<i>Corporate sense</i>						
I am involved in achieving my organization's/ department's mission.		0.556		0.540	4.12	0.795
I do that extra bit for my organization/ department over and above my direct responsibilities		0.692		0.635	4.00	0.882
In my work, I take the initiative in sharing responsibilities with colleagues.		0.692		0.628	4.06	0.796
I share my experience and knowledge with others.		0.560		0.409	4.26	0.736
<i>Personal flexibility</i>						
How easily would you say you can adapt to changes in your workplace?			0.839	0.717	4.04	0.766
I adapt to developments within my organization.			0.830	0.758	4.09	0.717
How quickly do you generally anticipate and take advantage of changes in your working environment?			0.701	0.654	3.78	0.825
Eigenvalues	4.751	1.556	1.225			
% of variance	39.592	12.965	10.208			
Cumulative % of variance	39.592	52.556	62.765			
Cronbach's	0.815	0.781	0.800			
Notes: n = 123, KMO = 0.846, $\chi^2 = 558.974$, df = 66, sig. = 000						

Table 8 - PCA of Employability

Job demands and Effort-reward fairness

Job demands and effort-reward fairness is two different dimensions we want to research in relation to innovative work behavior. We conducted one factor analysis for both the dimensions. The table below show the results from the factor analysis and the two-reliability analysis. By viewing job demands, one can see that the communalities are above the limit of 0.5. Further, the KMO is middling and acceptable with a value of 0.737, and a p-value < 0.001. The two factors job demands, and effort-reward fairness explains 76% of the variability in the original variables. The Cronbach's alpha α is above the requirement of 0.6 in both factors and is considered reliable.

Rotated component matrix ^a	Component		Communalities	Mean	SD
	1	2			
<i>Job demands</i>					
Do you have too much work to do?	0.871		0.775	3.60	0.997
Do you work under time pressure?	0.847		0.722	3.45	0.916
Do you have problems with the workload?	0.835		0.754	2.93	0.827
<i>Effort-reward fairness</i>					
I give a great deal of time and attention to the organization but get very little appreciation.		0.900	0.785	2.72	1.073
I feel unfairly treated in my job		0.862	0.810	2.04	1.051
I put more energy into my job than it is worth.		0.812	0.735	2.75	1.111
Eigenvalues	3.025	1.556			
% of variance	50.416	25.928			
Cumulative % of variance	50.416	76.344			
Cronbach's	0.827	0.842			
Notes: $n = 123$, $KMO = 0.737$, $\chi^2=324.132$, $df = 15$, $sig. = 000$					

Table 9 – PCA of job demands and effort-reward fairness

Work engagement

The last factor and reliability analysis completed was for work engagement. Work engagement has three dimensions which are vigor, dedication and absorption. All the dimensions turned into one factor, and almost all the communalities were above 0.5. The communality value of statement three (vigor) is 0.339. This is in fact too low and should be removed. However, we tested the reliability with and without this statement. The result from the reliability analysis implies that the alpha would hold the same value of 0.900, therefore the statement was not removed. The KMO value is 0.871, and the p-value < 0.001. The Cronbach's alpha for the work engagement factor is at 0.900 which indicate a reliable measurement of work engagement.

Component matrix ^a	Component			
	1	Communalities	Mean	SD
<i>Vigor</i>				
At my work, I feel bursting with energy	0.747	0.558	3.73	0.869
When I get up in the morning, I feel like going to work	0.714	0.510	4.04	1.085
At my work, I always persevere, even when things do not go well	0.582	0.339	4.33	0.764
<i>Dedication</i>				
I find the work that I do full of meaning and purpose	0.755	0.569	4.58	0.585
My job inspires me	0.875	0.765	4.27	0.861
To me, my job is challenging	0.717	0.514	4.19	1.037
<i>Absorption</i>				
Times flies when I am working	0.805	0.647	4.23	0.758
I get carried away when I am working	0.796	0.633	4.22	0.766
When I am working, I forget everything else around me	0.796	0.634	3.95	0.944
Eigenvalues	5.171			
% of variance	57.459			
Cumulative % of variance	57.459			
Cronbach's	0.900			

Notes: $n = 123$, $KMO = 0.871$, $\chi^2 = 647.021$, $df = 36$, $sig. = 000$

Table 10 - *PCA of Work engagement.*

3.4.3 Reliability and validity

To examine the quality of the research, one must review two important concepts reliability and validity. Reliability “...concerns the extent to which an experiment, test, or any measuring procedure yields the same results on repeated trials” (Carmines & Zeller, 1979, p. 11). This indicate that reliability is high if it is possible to obtain the same results using the same measurement. As illustrated in table 11, all 11 factors are considered as satisfying and reliable, where all scores above 0.7.

Factor's	Cronbach's alpha α
Innovative work behavior	0.925
Innovation & flexibility (Org. climate)	0.878
Regulative & Normative (Org. climate)	0.910
Cognitive (Org. climate)	0.858
Psychological safety (Org. climate)	0.760
Occupational expertise & Corporate sense (Employability)	0.781
Anticipation & Optimization (Employability)	0.815
Personal flexibility (Employability)	0.800
Job demands	0.827
Effort-Reward fairness	0.842
Work engagement	0.900

Table 11 - *Reliability of the 11 factors*

There are two main validity categories, which are internal and external validity (Wilson, 2014). The former has two subcategories, content and construct validity. Content distinguishes between face- and sampling validity. Face validity involves whether the measurements are measuring what it intends to measure. In this thesis, the measurements are retrieved from other researchers and are already validated. That gives reassurance that the measurements are measuring what is intended, as well as a method for ensuring construct validity. The former is about whether the measurement is measuring the concepts. Although, the questions are translated and modified from English to Norwegian and can have affected the degree of validity of the measurements. Thus, we went through the translated version together with the supervisor, as well as with test subjects. Since all the factors have a relatively high degree of reliability, it indicates that the face validity has not greatly decreased. This issue will still be a limitation due to translating. That will be discussed further in the subchapter 4.5 Limitations.

Sampling validity is about “...ensures that your measure includes all areas within the nature of your study” (Wilson, 2014, p. 146). This thesis aims to answer what encourages innovative work behavior by examining factors that are expected to be positively related. Thus, we have tried to use measurements that explains this concept the most. We have included the variables organizational climate, employability, job demands, effort-reward fairness, and work engagement. Further, we acknowledge that, for instance, the organizational climate has many aspects and terms that describe it. Thus, we included originally 5 dimensions, which turned out to be 4 in the factor analysis.

The last category is external validity is about “...the extent to which the finding from your study can be generalized to other cases or settings.” (Wilson, 2014, p. 146). This thesis is mostly based on empirical research conducted in other countries, except for Åmo (2006) research on the three institutional pillars and IWB. For instance, Norway has better employment conditions than e.g., the U.S. or China, which might result in that Norwegian employees are motivated by other factors than an employee in China. That might affect the external validity of this research, which might not be able to generalize the results to the U.K. or other countries. External validity is also affected by the fact, and it is only one company that is examined. If we included several companies in this research, it would be easier to generalize the results for Norway.

Effects on the validity and reliability

According to Wilson (2014), some elements can improve the validity of your research. For instance, it is important to make sure that the research question is workable. Further, one must also make sure that the measurements (question or statement) are being understood and related to the research question.

The first effect is a time error. Time error means that the time the study is conducted can affect the results. Initially, we planned to collect the data during March, but we had to wait due to external circumstances around Covid-19. That was to ensure that the participants had time to complete the survey and was not occupied by the situation. The reason being that the firm needed to adjust by having employees at the home office, and the communication between them was mostly digital. Then, our survey might have been noisy at that particular moment. If we did not take this into account when sending out the survey, it could have led to fewer respondents and more inaccurate answers. Thus, we waited until April to collect the data, and hopefully got more valid and reliable data than we would in March.

Another factor that can affect reliability is observer influence. That means that if the participants know that you are observing them, it can cause them to change their behavior. In this study, we made it clear to the participants that they were anonymous and that the firm would not get access to the raw dataset. That was mentioned for the participants due to the chance of them not being completely honest when completing the survey.

3.5 Ethics

When conducting research, there are several ethical issues that we need to consider as researchers, which is important in all types of research (Wilson, 2014). Ethics is defined as “*the principles, norms, and standards of conduct governing an individual or group*” (Treviño & Nelson, 1999, p. 12), and concerns how the research can affect individuals, groups, and governments. Even though some of the ethical considerations have already been disclosed, for example, voluntary participation. The purpose of this subchapter is to get a more detailed overview of all considerations regarding this research.

The ethical considerations in this thesis concern mainly the participants of the survey. We have taken several precautions to reduce the risk of harm (Wilson, 2014). That is, the respondents should not fear repercussions by their employer or colleagues by answering these

questions. Since we do not collect sensitive data, such as health issues, political or religious standpoints, the main ethical issue is to preserve anonymity among the participants. To preserve anonymity:

- We have not collected either email or IP-addresses.
- We have limited the scope of personal data.
- We have categorized some of the personal data, such as age and work experience. For instance, age was divided into six categories: “18-25”, “26-35”, “36-45”, “46-55”, “56-65”, and “over 65”.
- The firm, or any unauthorized, will not have access to the raw data set. The firm might have been able to identify some unique cases of the participants by the limited scope of personal data (*confidentiality*).
- In the results, the data is categorized into one “group”.

In addition to preserving anonymity, the participants must receive informed consent, which is “*a requirement for all human research that ensures that the participants understands the purpose of the research, his or her rights as a participant, and the potential hazards of participating in the research*” (Weathington et al., 2012, p. 40). The survey begins with the informed consent, which emphasizes what the survey is about, why they are asked to participate, and voluntary participation. Also, it is stressed with bold letters that the firm will not have access to raw data. Further, since we are not able to identify our participants, and we are not collecting email or IP-addresses, they were not able to withdraw their answers after the survey was completed, which was expressed. Although, there may be a unique case in our dataset, which would be able to withdraw their consent. Therefore, information consent expressed the rights for: “*As long as you can be identified in the data material, you are entitled to...*” (see appendix A). The information sheet also included our contact information, as well as supervisor, NSD, Data protection officer at UiS, which the respondents could contact if necessary. Next, the participants must consent to participate in the survey. They are asked to press “I agree to participate, and that my information will be kept until the end of 2020”, if they decide to participate. See appendix A for further information about our informed consent.

NSD - Norwegian Centre for Research Data

In order to collect personal data, such as age, gender, educational level, etc., it is required to report the research project to the Norwegian Centre for Research Data (NSD). The reason is

that NSD has to ensure that our research follows the guidelines for retrieving personal data according to privacy legislation. We had to send descriptions about the project, for example, information about our sample, the survey questions, and information and consent form. We received the following evaluation (See appendix B for the full assessment from NSD):

“It is our opinion that the processing of personal data in the project will be in accordance with the privacy legislation as long as it is carried out in accordance with what is documented in the notification form 21.02.2020 with attachment, as well as in the notification dialogue between the applicant and the NSD. The data processing can start.”

4. Results and discussion

In the following chapter, we will present the descriptive and inferential data results, as well as discussion of the results. Further, we will discuss the practical implications of the results regarding Haugaland Kraft, and theoretical implications and limitations.

4.1 Results

At first, we conducted a correlation test to see which control variables are correlated with the dependent variable, IWB. Out of 9 control variables, only two correlated with IWB, which were educational level and background. We decided to use age and gender because it is always interesting to see what impact these control variables have. Also, in the regression, it shows that no gender or any age is superior when it comes to IWB. Respondents were divided into six different departments, and after investigating the correlation test, it reveals that no department is more significant than others. That confirms the theory that no position is superior. For example, the “R&D” department did not have a greater impact than customer-oriented positions or economical positions on innovative work behavior. Therefore, only age, gender, educational level, and type of educational background were used in further analysis. (See appendix A for further information).

Age was measured using six intervals with range from 18 year to over 65 years. As illustrated in the graph below, the participants in this research were mainly between 46-55 years old (30,8%). The intervals 36-45 years, 56-65 years, and 26-35 years has the most respondents in respectively.

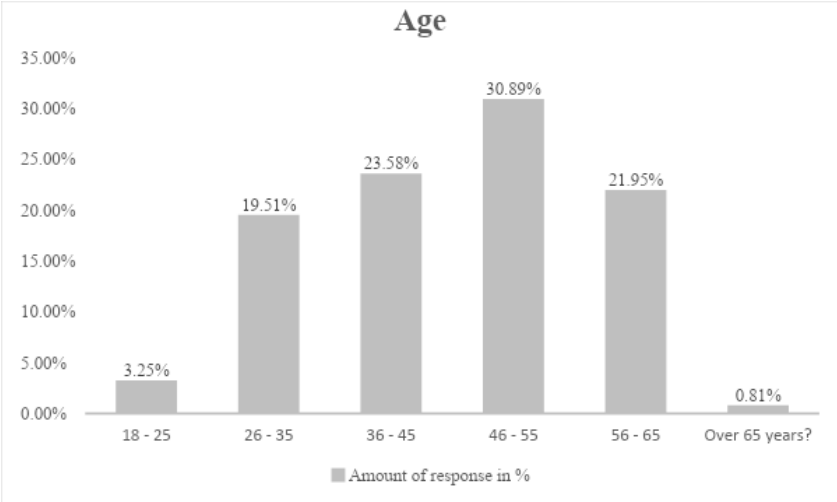


Figure 17 - Descriptive statistic for the control variable: Age

The *gender* statistics report that 83,7% of the respondents were male, and 16,2% were female. The reason is that the distribution of the proportion of men who received the survey is significantly greater than the proportion of women.

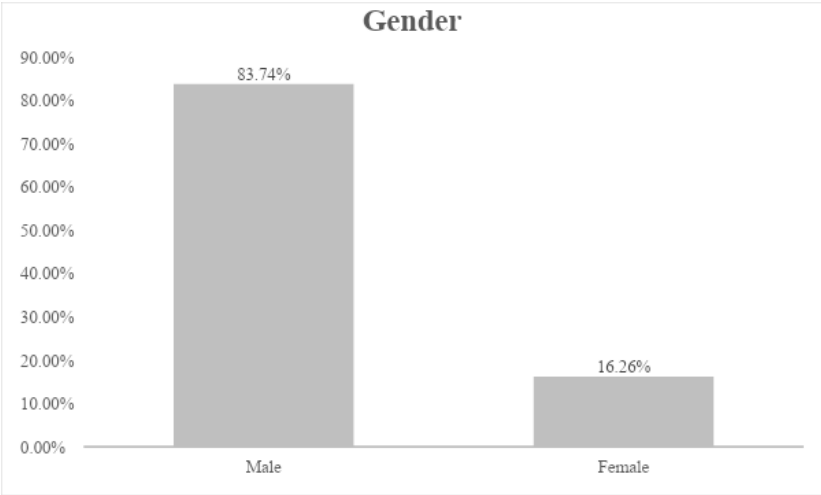


Figure 18 - Descriptive statistic for the control variable: Gender

The highest *educational level* is master's degree, which 13,11% of the respondents have. Most of the respondents have a bachelor's degree (31,9%), vocational courses (26,2%), or vocational school (22,1%), respectively.

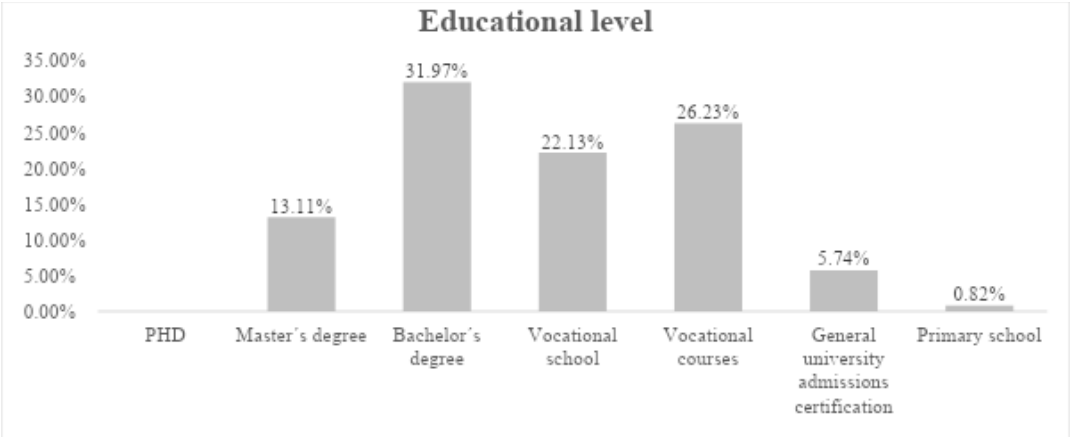


Figure 19 - Descriptive statistic for the control variable: Educational level

For the control variable *educational background*, the graph report that most of the respondents has a technical (71,5%) educational background. The respondents have economical, other, and humanities as their educational background, respectively. Also, the respondents had the opportunity to select several educational backgrounds, as some people have a combination of specialties.

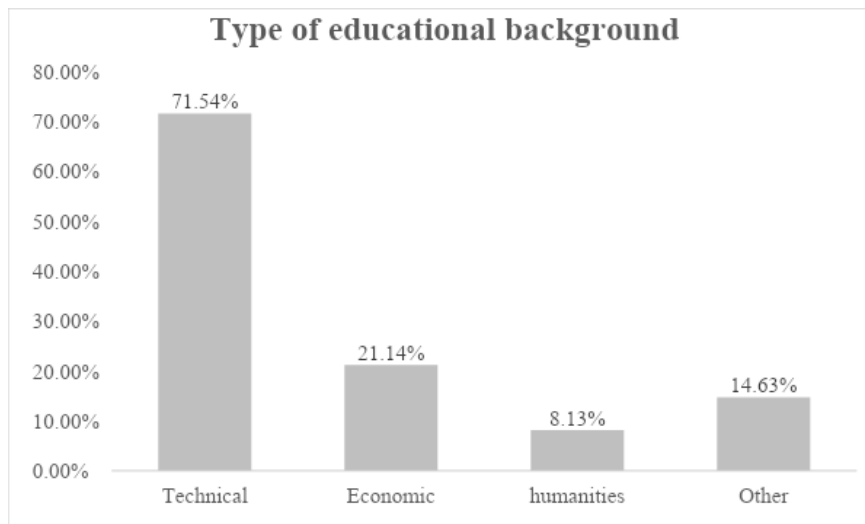


Figure 20 - Descriptive statistic for the control variable: Educational background

4.1.1 Descriptive statistics for innovative work behavior and work engagement

Figure 21 below shows the mean for each variable in innovative work behavior. In other words, which tasks the employees at the power company performs on average. For instance, “Search out new working methods, techniques, or instruments” has the highest mean out of the 9 variables. This indicates that the employees do this task more than the others.

Figure 22 illustrates how often the employees at Haugaland Kraft perform the three behavioral tasks: idea generation, idea promotion, and idea realization, on average. The figure report that the highest mean is for the idea generation tasks (3.31), and that the mean decreases for idea promotion (2.98) and idea realization (2.87). That means Haugaland Kraft has a greater potential of involving its employees in later stages of the innovation process. It is noticeable that the employees do not necessarily promote their ideas, even though they are creating them. Although the deviation between generation and promotion can be explained by that, not all ideas or solutions require mobilizing support. That is, simple innovations can be carried out by individuals (Janssen, 2000). On the other hand, employees might not promote all their ideas. The reason can be that they believe some of their ideas is not necessarily valuable or good enough. Further, the deviation between idea generation and idea realization was expected, due to the person who generates the idea is not necessarily the right person to complete it.

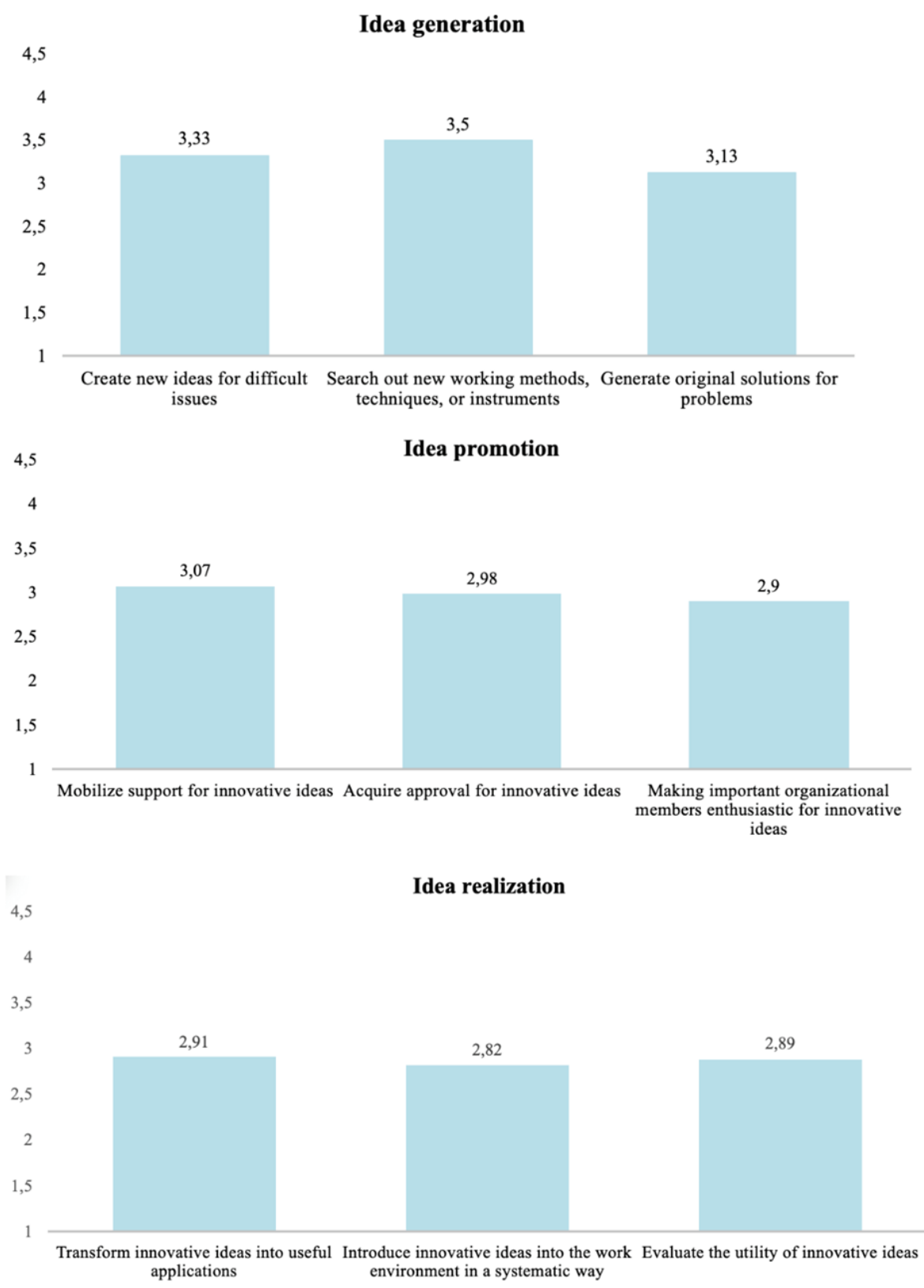


Figure 21 - Mean for IWB tasks

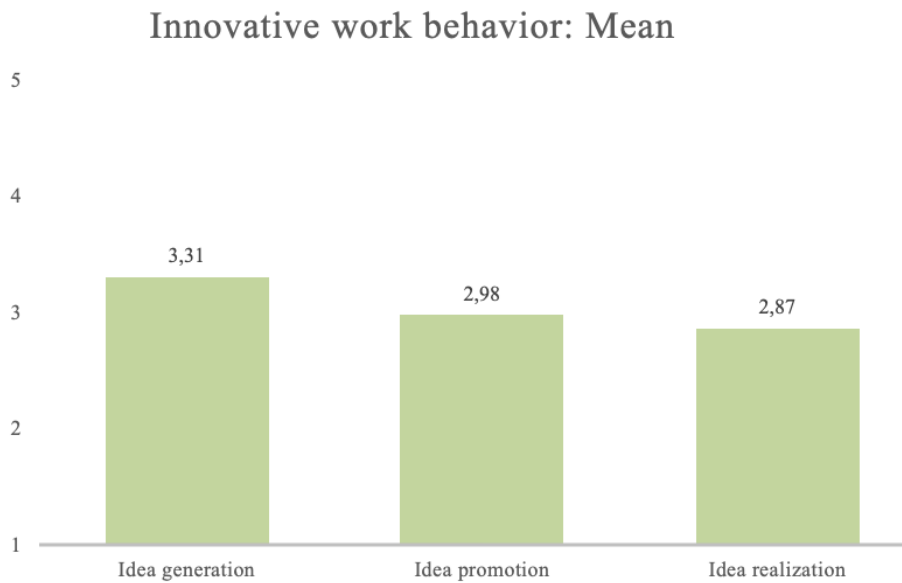


Figure 22 - Mean for IWB

Figure 23 presents the mean for the three work engagement dimensions vigor, dedication, and absorption. For all the dimensions, the mean is above 4, which indicates that the employees at Haugaland Kraft are highly engaged in their work. This result is highly positive for the power company, as they have a good foundation to utilize their engaged employees towards innovation and change.

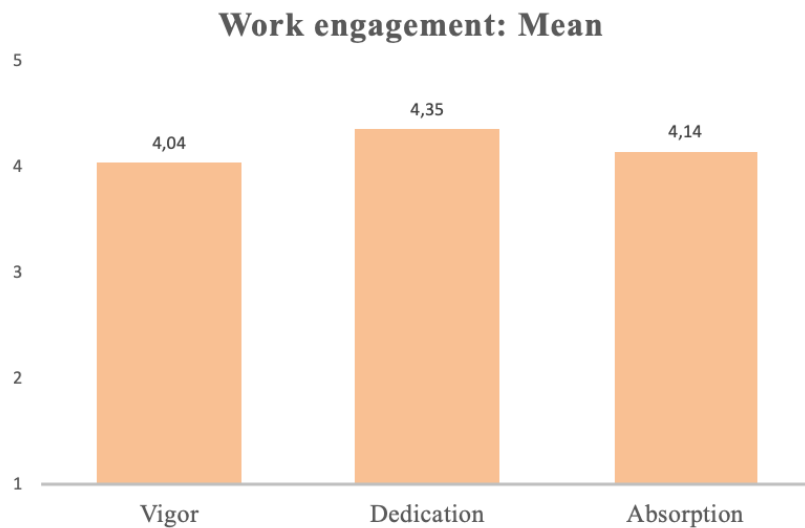


Figure 23 - Mean for WE

4.1.2 Correlation matrix – Innovative work behavior

The table below reports the correlation among the factors that have been selected due to previous arguments. We used Pearson's product-moment correlation coefficient to find the correlations and measures "... *the degree and the direction of the linear relationship between two variables*" (Gravetter & Wallnau, 2014, p. 453). The correlation matrix (Table 12) reveals that several variables are significantly correlated with the dependent variable, IWB. Educational level and IWB are significantly correlated at a level of 0.05, which shows that higher education yields higher innovative work behavior (0.229*). The humanities (0.182*) and economical background (0.211*) have a significant relationship with IWB at 0.05 level. While the technical background (0.009) does not. A possible explanation for this result is that the sample consists of a lower educational level than a bachelor's degree with a technical background. That means, both economical and humanities background is presumed as a minimum a bachelor's degree level. The educational background is not necessarily relevant for IWB. It might be that the level of education has a greater impact on whether the employee exhibit IWB or not.

Regarding organizational climate, only the dimension Regulative & Normative (0.218*) has a significant correlation with IWB at the 0.05 level. Further, all the employability dimensions have a significant relationship with IWB at a 0.01 level. Lastly, there is a significant correlation between job demands and innovative work behavior (0.269**). According to these results, sub-hypotheses 1b, 1c, 2a, and 2b, as well as hypothesis 3, are preliminarily supported.

Constructs	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Age	3.51	1.154																	
2. Gender	0.83	0.370	0.139																
3. Educational level	4.17	1.178	-0.083	-0.142															
4. Technical	0.71	0.453	0.109	0.406**	-0.62														
5. Economics	0.21	0.409	0.012	-0.365**	0.247**	-0.468													
6. Humanitarian	0.08	0.274	-0.029	-0.29	-0.111	0.0236**	-0.340**												
7. Innovation & flexibility	3.1301	0.90951	-0.05	-0.95	0.04	-0.004	0.019	-0.002											
8. Regulative & Normative	3.271	0.89864	-0.045	-0.109	0.156	-0.77	0.081	0.037	0.766**										
9. Cognitive	3.6233	0.83955	-0.135	-0.058	-0.009	0.125	-0.005	-0.115	0.355**	0.296**									
10. Psychological safety	3.794	0.89983	-0.103	-0.126	0.126	0.016	-0.044	-0.087	0.565**	0.607**	0.336**								
11. Occupational expertise & corporate sense	4.1518	0.55154	0.139	-0.045	0.151	0.01	0.081	0.053	0.047	0.124	0.079	0.087							
12. Anticipation & Optimization	3.8943	0.74696	-0.146	-0.063	0.291**	-0.049	0.091	0.162	0.032	0.028	0.087	-0.014	0.460**						
13. Personal flexibility	3.9756	0.65170	-0.096	-0.13	0.059	-0.061	-0.042	0.118	0.211*	0.196*	0.226*	0.125	0.526*	0.376**					
14. Job demands	3.3306	0.78984	0.151	0.064	0.103	-0.01	0.095	-0.163	-0.192*	-0.240**	-0.118	-0.099	0.323**	0.128	0.079				
15. Effort reward-fairness	2.5068	0.94025	0.242**	0.129	-0.195*	-0.005	0.039	-0.119	-0.540**	-0.537**	-0.250**	-0.584**	0.096	-0.02	-0.036	0.335**			
16. Work engagement	4.1771	0.64410	0.172	-0.081	0.113	0.012	0.005	0.062	0.431**	0.425**	0.221*	0.320**	0.315**	0.382**	0.356**	0.036	-0.218*		
17. Innovative work behavior	3.0587	0.74973	0.025	0.028	0.229*	0.009	0.182*	0.211*	0.05	0.218*	0.109	-0.018	0.482**	0.453**	0.322**	0.269**	0.063	0.151	

Note: *p < 0.05; **p < 0.01; ***p < 0.001

Table 12 - Correlation matrix

4.1.3 Regression model for innovative work behavior

The purpose of conducting the multiple regression analysis is to find the predictors of the dependent variable, IWB. During OLS, we calculated the tolerance value for each independent and control variable, which were all within acceptable limits. Data were also screened for normality and heteroscedasticity; no violations were observed. To treat missing values, we used the listed exclusion of respondents. The following table presented the regression model with innovative work behavior as the dependent variable.

	Model 1 St β: Control variables	Tolerance	Model 2 St β: Innovative work behavior	Tolerance
<i>Controls</i>				
Age	0.008	0.959	0.025	0.737
Gender	0.092	0.78	0.057	0.737
Educational level	0.137	0.855	-0.035	0.72
Technical background	0.175	0.609	0.210*	0.572
Economics background	0.248*	0.675	0.178*	0.633
Humanities background	0.233*	0.809	0.257**	0.716
<i>Organizational climate</i>				
Innovation & Flexibility			-0.198	0.343
Regulative & Normative			0.566***	0.316
Cognitive			0.097	0.77
Psychological safety			-0.122	0.47
Adjusted R ²			0.150*	
% Change in adjusted R ²			0.065 *	
<i>Employability</i>				
Occupational expertise & Corporate sense			0.168	0.509
Anticipation & Optimization			0.340***	0.57
Personal flexibility			0.087	0.584
Adjusted R ²			0.371***	
% Change in adjusted R ²			0.221 ***	
<i>Job demands</i>				
Adjusted R ²			0.267***	0.695
% Change in adjusted R ²			0.424***	
<i>Effort-reward fairness</i>				
Adjusted R ²			0.076	0.469
% Change in adjusted R ²			0.422	
<i>Work Engagement</i>				
Adjusted R ²			-0.209*	0.558
% Change in adjusted R ²			0.445*	
Change R ²			0.023*	
Adjusted R ²	0.085*		0.388***	
F-value	2.888		0.445***	
n	123		7.106	
			123	

Notes: *p < 0.05; **p < 0.01; ***p < 0.001

Table 13 - Regression table: Innovative work behavior

Model 1:

In model 1, only the control variables are entered. Control variables such as age, gender, educational level, and educational background explain 8,5% of the variance in the dependent variable, innovative work behavior, and a significance level of at 0.05. Only economical and humanities backgrounds were statistically significant, with IWB in model 1, at a 0.05 level.

Model 2:

In model 2, control variables and independent variables are entered. This model explains 44.5% of the variation in innovative work behavior, with a p-value <0.001. From model 1 to 2, the significance level of the educational background has changed. Specifically, the technical background is statistically significant at the 0.05 level, and humanities have a stronger statistically significance at a 0.01 level. While economical background stays unchanged in significance level. That means employees with a humanities educational background exhibits IWB more than both technical and economical background.

Organizational climate

Regarding the organizational climate, it is only the regulative & normative dimension that is statistically significant with a 0.001 level. In the factor analysis, the regulative and normative dimensions merged. Therefore, sub-hypotheses 1b and 1d are supported but are mutually reinforcing (Scott, 2001). Innovation and flexibility, cognitive, and psychological safety is not statistically significant in the model. The model's R^2 increased by 6.5% when the organizational climate was introduced, with a significance level at p-value < 0.05. Thus, hypothesis 1 is supported.

Hypothesis & Sub-Hypotheses: (<i>Organizational climate</i>)	Results
Hypothesis 1: There is a positive relationship between organizational climate and IWB.	*
Sub-hypothesis 1a: <i>In an organization where the climate is perceived as flexible, the employees will report higher levels of innovative work behavior</i>	Not supported
Sub-hypothesis 1b: <i>In an organization where the management facilitates and encourages innovation initiatives, the employees will report higher levels of innovative work behavior</i>	***
Sub-hypothesis 1c: <i>In an organization where the employees possess the necessary knowledge and skills to innovate, the employees will report higher levels of innovative work behavior.</i>	Not supported
Sub-hypothesis 1d: <i>In an organization where contributing to innovation is highly valued, the employees will report higher levels of innovative work behavior.</i>	***
Sub-hypothesis 1e: <i>In an organization where there is a high level of psychological safety, the employees will report higher levels of innovative work behavior.</i>	Not supported

Table 14 - Summary of Organizational climate hypothesis and sub-hypotheses

Employability

Investigating the employability in the regression, only one out of 3 has a significant effect on the dependent variable IWB. Anticipation and Optimization have a strong statistically significance on innovative work behavior at a p-value < 0.001, which supports the sub-hypothesis 2a. Occupational expertise and corporate sense were assembled into one factor in the factor analysis. In the regression, this factor is not statistically significant with innovative work behavior. Therefore, sub-hypothesis 2b is not supported. The last dimension personal flexibility is not statistically significant with IWB. When employability dimensions were included, the model's R² increased by 22,1% and was statistically significant at p-value < 0.001. Thus, hypothesis 2 is supported.

Hypothesis & Sub-Hypotheses (<i>Employability</i>)	Results
Hypothesis 2: There is a positive relationship between a high level of employability and IWB.	***
Sub-hypothesis 2a: <i>Employees who report a high level of Anticipation and Optimization will report a high level of innovative work behavior.</i>	***
Sub-hypothesis 2b: <i>Employees who report a high level of Corporate sense will report a high level of innovative work behavior.</i>	Not supported

Table 15 - *Summary of Employability hypothesis and sub-hypotheses*

Job demands, effort-reward fairness and work engagement

The three concepts of job demands, effort-reward fairness and work engagement are assembled into one table, due to a smaller scope of hypotheses. Job demands are strongly statistically significant with innovative work behavior, at a p-value < 0.001. Effort-reward fairness is not statistically significant with IWB. Also, work engagement hypothesis is not supported either, due to a negative value.

Hypotheses:	Results
Hypothesis 3: (<i>Job demands</i>) There is a positive relationship between a high degree of job demands and IWB.	***
Hypothesis 4: (<i>Effort-reward fairness</i>) There is a positive relationship between a high degree of effort-reward fairness and IWB.	Not supported
Hypothesis 5: (<i>Work engagement</i>) There is a positive relationship between a high degree of work engagement and IWB.	Not supported

Table 16 - *Summary of hypotheses: Job demands, Effort-reward fairness, and WE.*

4.2 Discussion

The model in this research is unique in the sense that no one has tested these specific variables in relation to IWB at once, to our knowledge. The results reveal that the control and independent variables in the model is explaining 44,5% of the variance of innovative work behavior, with a significance level at 0.001. This result might be the most important discovery in this thesis and shows that the variables included are affecting IWB to different degrees. The variables that were found to be statistically significant and positively related to IWB, were regulative & normative (OC), anticipation and optimization (Employability), and job demands.

4.2.1 Organizational climate

One of the main predictions was that organizational climate would be the most important factor that influences innovative work behavior, considering it is an influential factor in all organizations' behaviors. Even though only one dimension is proven to be statistically significant (*regulative & normative*), it can be argued that the hypothesis 1: *There is a positive relationship between organizational climate and IWB*, is supported. That is, the organizational climate has many aspects, and many terms and elements can describe the climate. It might be other aspects of the climate that are significantly related to IWB, which have not been included in this model. The results that regulative and normative is positive significant indicates that organizational climate is positively related to IWB. Thus, we conclude that hypothesis 1 is supported. Although, it must be emphasized that organizational climate was not as important determinant as predicted, due to the model's R^2 only increased by 6.5% when the organizational climate was introduced and was statistically significant at p -value <0.05 . Again, the reason can be that this research did not include the right aspects of the climate regarding IWB.

Innovation and flexibility

The dimension innovation and flexibility measure whether the climate is perceived as flexible and the ability to redirect the course of action quickly if needed. It appears that a climate that is perceived as flexible is not encouraging IWB as it is not statistically significant and has a negative value. Thus, the sub-hypothesis 1a is not supported, which is *"In an organization where the climate is perceived as flexible, the employees will report higher levels of innovative work behavior"*. The result was surprising considering our prediction of the dimension, and the sub-hypothesis was not supported. We assessed that a business with many

lags and resistance in the innovation process would prevent employees from demonstrating innovative work behavior. Therefore, a climate where ideas are more easily accepted, and assistance is readily available was expected to have a positive impact on employees' innovative work behavior. However, Montani et al., (2014) found a correlation between innovation and flexibility and IWB, although it was not statistically significant in the regression model. Montani et al., (2014) found that innovation and flexibility had an indirect effect when introduced with other variables. Thus, it is possible that innovation and flexibility have some indirect effect on our model but have not been tested in this thesis. This dimension might have more influence on the firm's innovative performance rather than IWB. According to Friis et al., (2016), flexibility affects innovation performance. That is, due to increased globalization, the firms need to change faster than before, and therefore, flexibility should be a determinant. This claim cannot be supported by our data, as the innovation performance section had a small sample (22 respondents) and too low Cronbach Alpha.

The three pillars of institutions

The three pillars, Regulative, Cognitive, and Normative, are powerful constraints on conducts and can encourage and support behaviors that are considered as beneficial (Scott, 2001). In our results, regulative & normative have merged in the factor analysis, which might be because that regulative and normative is mutually reinforcing. That means, the unspoken rules (*norms*) influence the spoken rules (*regulative*), and the spoken rules affect the unspoken rules. Regulative & normative was statistically significant with a p-value < 0.001, which means both sub-hypotheses 1b and 1d were supported. The result indicates that the management within the power company can encourage and support innovative work behavior by setting rules and policies that facilitate innovative initiatives. Also, the result indicates that a climate that values innovative thinking and actions is encouraging IWB.

The last dimension cognitive was not statistically significant, and thus sub-hypothesis 1c is not supported. The result was surprising and indicates that having a shared understanding of how to start and run innovation projects is not encouraging IWB. In Åmo (2006) research, the three pillars and IWB were statistically significant. However, he distinguished between external and internal oriented innovations, where the former means new products and services, and internal oriented innovations are i.e., routine improvements or new ways to organize internally. His results reveal that regulative and normative were statistically significant on external oriented innovations, while cognitive was statistically significant for

internal oriented innovations. It is not surprising that the cognitive dimension might be more influential on internal innovations, as these are more often carried out by only internal employees. That means, external innovations might be outsourced to some degree, while internal innovations are certainly more handled internally. In this research, we did not distinguish between external and internal IWB and used a different set of questions for the dependent variable. That might explain our results, why regulative & normative is statistically significant with a p-value < 0.001 and cognitive is not statistically significant.

When we developed the survey, we assumed that based on previous experience, most people do not acknowledge that internal improvements, such as routines, are innovating (specifically in Norway). Thus, in the IWB section of the survey, we emphasized that innovation also includes improvements of something existing, e.g., routines, internal processes, and methods. The participants were asked to consider this information before answering. However, it can be difficult to recalibrate the interpretation of innovation, even though we have stressed it at the beginning of the questions. That might also explain why idea promotion and realization has lesser mean than idea generation, where the questions entail the words “innovative ideas and/or improvement of something existing”. If the respondents did not take internal oriented innovations into account when answering these questions, it might have affected the significance level of the cognitive dimension, as well as idea promotion and realization on average. However, we do not have the evidence to support this claim that the participants did not take internal innovations into account, and the result might have other explanations.

Psychological safety

Psychological safety is a climate that is considered safe for interpersonal risk-taking and was expected to influence IWB. Innovative work behavior is described as risky behavior, due to the risks of being viewed as a troublemaker, or incompetent. It was surprising that psychological safety was not statistically significant, as previous research has found that PS is statistically significant related to IWB (Sharifirad, 2013; Wang et al., 2014). Our result indicates that psychological safety does not influence innovative work behavior and is not encouraging IWB. Therefore, sub-hypothesis 1e is not supported. The reason might be that employees who experience psychological safety not necessarily demonstrate innovative work behavior. Although PS is not encouraging IWB, it might be a prerequisite. Without psychological safety, the employees will not promote or carry out their ideas to the same degree as with psychological safety. However, employees may demonstrate IWB regardless

of whether they experience psychological safety or not, or that PS is more of a mediator between other variables and IWB.

Another plausible explanation is that this research was conducted in Norway, which is known to have better employment conditions than in other countries. The research by Javed et al. (2019), Sharifirad (2013), and Wang et al. (2014) has been conducted in Pakistan, Iran, and China, respectively. Psychological safety might have a higher significance in these countries than in Norway. The employees at Haugaland Kraft do not have to worry about losing their job to the same degree as employees in Pakistan, Iran, or China. That means employees in Norway might not fear the same severe consequences of promoting an idea that fails when implemented. Norway also has better conditions when it comes to unemployment. In that sense, if an employee loses his job in China, it can lead to desperate measures to support the family, while an employee in Norway is protected by the welfare state. Thus, it is a possible explanation of why our results contradict previous research findings. However, this result might have another explanation, as we do not have the evidence to support this claim.

4.2.2 Employability

Employability is the employee's general and professional competencies, which is divided into 5 dimensions; Occupational expertise, Anticipation and Optimization, Personal flexibility, Corporate sense, and Balance. The relationship between employability and IWB has not been investigated by anyone else than Stoffers et al., (2018), and the empirical evidence is limited. Thus, future researchers need to explore this relationship further when innovation is partially dependent on the employee's competencies.

It can be argued that hypothesis 2: *There is a positive relationship between a high level of employability and IWB*, is supported. Even though 3 out of 5 dimensions were not proven to be statistically significant, and 1 of them is missing, the model's R^2 increased by approximately 22,1% with a p-value < 0.001 when employability dimensions were included in the model (see table 13). This result indicates that employability is the most important variable that explains the variance in innovative work behavior in this research. Thus, we can conclude that hypothesis 2 is supported.

The results of employability are in line with Stoffers et al., (2018) findings, except for one dimension, corporate sense. Also, the dimension balance was excluded from the analysis

because it was not suitable as a factor. Thus, we cannot support or decline Stoffers et al., (2018) result regarding balance, which in their results was not statistically significant. Personal flexibility was not statistically significant in either Stoffers et al., (2018) or our results. That means, how well an employee adapts to various internal and external changes in their work environment, is not influential on whether the employee demonstrates IWB. Anticipation and optimization results were as predicted and are statistically significant at a 0.001 level. Thus, the sub-hypothesis 2a was supported. This result indicates that the development of knowledge and skills, as well as taking advantage of newly acquired knowledge, influences IWB positively.

Occupational expertise & corporate sense merged as a factor in the factor-analysis and was not statistically significant (p-value: 0.079). This result support and contradicts Stoffers et al., (2018) findings at once. That is, occupational expertise was negatively related to IWB in their research and did not enhance the degree of IWB. The corporate sense was statistically significant in all three behavioral tasks and was predicted to be the most important determinant of IWB regarding employability. A possible explanation of why corporate sense was not statistically significant is that it merged with a negatively related variable, occupational expertise. However, we tested a regression model without occupational expertise (excluded from the factor analysis), which revealed that the significance level of corporate sense increased from 0.079 to 0.08. That shows that occupational expertise has almost no impact on the significance level of corporate sense; hence the sub-hypothesis 2b was not supported. The reason might be that, in Stoffers et al., (2018) research, they used the supervisor's opinion on whether the employees demonstrate IWB in addition to self-reporting. That might have resulted in employees who show a high degree of corporate sense and have received halo-effect by their supervisors. That is supported by the fact, "*... the supervisor's ratings were systematically higher than the corresponding self-ratings*" (p. 19), regarding IWB. Thus, the halo-effect of employees who demonstrate a high degree of corporate sense is a plausible explanation of why our results contradict Stoffers et al., (2018) findings. That means a supervisor will more certainly appreciate employees who show a high level of commitment to the firm and work hard to achieve the firm's goals. Another explanation for this result can be that a high degree of corporate sense not necessarily results in a higher level of innovative work behavior.

It must be emphasized that even though corporate sense & occupational expertise was not statistically significant, it is still influential on IWB to some degree. Corporate sense is probably the most influential of those two, as the significance level only increased by 0.001 when occupational expertise was excluded. Since employees with a high level of corporate sense identify with the firm's goals, Haugaland Kraft might have the potential to encourage its employees to demonstrate IWB by setting innovation goals.

4.2.3 Job demands

Previous research has frequently found that a high degree of job demands is positively related to IWB (Janssen, 2000; Bunce & West, 1994; Dediu et al., 2018; Hernández et al., 2007; De Spiegelaere et al., 2012). Thus, our result is in line with previous research, which shows that employees turn a high degree of job demands into innovative work behavior. Thus, a high level of job demands is statistically significant with a p-value < 0.001, and hypothesis 3: *There is a positive relationship between a high degree of job demands and innovative work behavior*, is supported. Additionally, the model's R² increased by 5,3% when job demands were introduced and had a p-value < 0.001. Bunce and West (1994), and Janssen (2000) states that turning high job demands into IWB is a coping mechanism. In that sense, the employees innovate to cope with a high level of job demands, by, for example, finding a new way to do an ordinary work task more efficient. It can also be interpreted that challenging tasks and goals have a positive impact on IWB.

We discussed in the three pillars section that the employees at the power company might not have considered internal oriented innovations when answering the IWB questions. Therefore, it raises questions about whether turning a high level of job demands into IWB is a coping mechanism. If this assumption or claim is true, that the employees at the power company have not taken internal innovations into account, it contradicts the explanation provided by Bunce and West (1994) and Janssen (2000). In that sense, IWB is used to find new ways to do ordinary tasks more efficiently or new routines that help the employee to cope with the high level of job demands, according to these researchers. It makes no sense that an employee who contributes to external innovations, reduce their daily workload. The question is, are job demands statistically significant because IWB is characterized as extra-role behavior? In other words, is it possible that the employees who show IWB, have higher job demands as these innovation actions come additionally to daily tasks? Thus, we are questioning why the relationship between job demands and IWB is statistically significant.

4.2.4 Effort-reward fairness

Effort reward-fairness entails that the employees perceive fairness in exchange relationship between them and the employer. The assessment of effort-reward fairness springs from the research by Janssen (2000), where he tested effort-reward fairness as a mediator between job demands and IWB. This research concluded that employees who perceived the fairness ratio as fair are more likely to turn a high level of job demands into innovative work behavior. Due to limited research regarding the direct relationship between effort-reward fairness and IWB, we decided to test if effort-reward fairness could have a direct influence on IWB instead. The results contradict hypothesis 4: *There is a positive relationship between a high degree of effort-reward fairness and IWB*, as it is not statistically significant. Further, the model's R^2 is decreasing by 0.2% when effort-reward fairness is included, which indicates that effort-reward fairness does not explain the variance in IWB. However, this result was not statistically significant.

A primary reason for the result is that effort-reward fairness is a mediator in other research in relation to IWB and not a direct influence. Another reason could be the differences in the context of the research. Our research was completed in a Norwegian power company, while Janssen (2000) investigated a Dutch industrial organization in the food sector. In Norway, the employees might have better economic conditions, which might give social exchange lesser importance than in other countries. Lastly, another reason can be that even if the employee perceives the workplace as fairly, it does not mean they reciprocate with innovative actions. Maybe they chose to reciprocate with other types of tasks, that is beneficial for the firm

4.2.5 Work engagement

Several researchers have found that work engagement is positively related to IWB (Siddiqi, 2015; Agarwal, 2014; Agarwal et al., 2012; De Spiegelaere et al., 2012; Wang et al., 2019). Thus, the prediction that engaged employees is demonstrating innovative work behavior to a larger extent than employees without work engagement. The reason is that an engaged employee is often more creative, productive, and innovative, according to Bakker and Demerouti (2008). Engaged employees are also more willing to take on extra-role behavior. Therefore, it was surprising that work engagement is negatively related to IWB in our result, which contradicts hypothesis 5: *There is a positive relationship between work engagement and IWB*. A possible explanation for this result is that an employee with a high degree of work engagement does not necessarily lead to a higher degree of IWB. An employee can be

enthusiastic about its work and have lots of energy without it, leading to more innovative actions. In other words, they might use their energy and creativity to achieve the firm's goals or other daily tasks, which decreases innovative initiatives. If this claim is true, then the firm and management team can influence their engaged workers to demonstrate IWB by setting rules and policies that are positively related to IWB, which might influence the firm's norms and values.

4.3 Practical implications for Haugaland Kraft

In this subchapter, we will discuss how these results can benefit Haugaland Kraft and its practical implications. Primarily, it must be emphasized that although several variables were not statistically significant, it might have an impact on IWB to some extent. Also, these variables can have a positive influence on other beneficial and productive behaviors in the firm. For instance, psychological safety is important even though we did not prove that it is positively related to IWB in our results. If the employees fear that they will be mocked for expressing their mistakes, they might not tell somebody before it is too late to correct the error (Tidd & Bessant, 2014), which might lead to high expenses for the firm. The same goes for effort-reward fairness. If the ratio is perceived as low, it might lead to other bad outcomes for the individual and the firm.

Our results regarding the organizational climate show that regulative and normative has a strong impact on whether the employee demonstrates innovative work behavior. The management at Haugaland Kraft can encourage IWB among their employees to a large extent, by setting rules and policies that influence innovative endeavors. For example, put innovation on the agenda and focusing on the development and improvement of both external and internal innovations. Alternatively, having explicit guidelines on how to go forward with their ideas to the management. Also, having rules when the employees come forward with their ideas, and they are guaranteed feedback on the "progress", might encourage IWB. According to Bos-Nehles, Renkema and Janssen (2017), feedback is found to be a positive influence on IWB by other researchers. That might also result in that the employees are experiencing a climate that values innovative initiatives and actions, which is also a positive influence on IWB (normative). Regulative and normative are mutually reinforcing. Thus, it is recommended to start with the regulative within the firm to encourage the employees to demonstrate IWB. Regulative is more tangible than norms and value, and hopefully, regulative affect normative over time.

When it comes to employability, it shows that this concept has a stronger impact on IWB than the climate, according to our results. That means the employee's personal properties are more significant than macro-level conditions. It can be argued that personal attributes are not encouraging IWB, as they depend on the individual. However, basic psychology suggests that personal attributes are based on both biological and environmental factors (Holt et al., 2012). Thus, possible that the firm and environment can influence these characteristics that employability consists of. For instance, whether the employees develop their knowledge and skills, or not. Anticipation and Optimization have a strong impact on IWB and indicates that maybe focus on the training and development of Haugaland Kraft's employees can encourage IWB. According to Bos-Nehles et al., (2017), HRM-practice training and development were significant for IWB in several studies. The most important regard to keep in mind is that the training and development program must be beneficial for the employee's work, where they can apply newly acquired knowledge into their work tasks (Lai, 2011). Also, the training and development are forward-looking, due to individuals and "*... firms cannot rely on past experience since this has little relevance to current or future problems.*" (Kesting & Ulhøi, 2010, p. 68).

Further, this result can benefit Haugaland Kraft regarding new employees. When considering candidates for a new position, they can assess whether the candidate is showing any interest in developing their knowledge and skills, and how they might tend to do so. Even though the corporate sense was not statistically significant in our results, the firm should strive to have highly committed employees for several reasons. For instance, highly committed employees will have a great impact on the firm's overall results, as they identify with the firm's goals and values (Van Der Heijde & Van Der Heijden, 2006). In relation to IWB, the firm should try to involve their employees in the innovation processes and forming innovation goals. That might result in a higher commitment to the firm and, to a small degree, encourage the employees to demonstrate IWB.

Job demands result indicates that Haugaland Kraft should not decrease the workload of its employees because a high level of job demands influence IWB positively. This result can be interpreted as challenging tasks and goals can encourage the employees to demonstrate IWB. However, it is essential to understand that a high level of job demands can also turn into stress and burnout. There is a thin line between burnout and utilization of IWB as a coping mechanism (Bunce & West, 1994). If the employee's competencies do not extend to finding

new ways to do things more efficiently, then the high level of job demands might result in unfavorable outcomes for the individual and the firm. Thus, it is suggested that the workload and difficulty level must match the employee's capabilities (Csikszentmihalyi, 1990). Another regard to keep in mind is that we are also questioning why job demands are positively related to IWB. Due to external innovation does not necessarily result in that the employees do their work tasks more efficiently. Hence, we recommend being cautious regarding this result, and the firm should assess the employee's competencies before giving heavy workload and challenging tasks.

The work engagement result indicates that it has a negative effect on IWB. This result, we recommend the firm not to spend too much time on since it has been proven by several other researchers that it is positively related to IWB. As previously stated, an employee can be engaged in their daily work tasks and goals, but do not use their efforts on innovative initiatives. Thus, that is a possible explanation for why work engagement is negatively related to IWB in our results if the firm's goals at a micro-level do not involve innovation. If that is the case, then the management has the potential to encourage their engaged workers into demonstrating IWB with the regulative system and setting innovation goals. Moreover, ask their employees about inputs and new perspectives on problems that the power company faces. As illustrated in figure 23, Haugaland Kraft has very engaged employees, which is highly positive for the firm, regardless of whether it influences IWB. That is because engaged employees are more creative, more productive, and among other things (Bakker & Demerouti, 2008).

4.4 Theoretical implications and recommendation for future research

This thesis offers important implications for the theory by presenting a more holistic picture of how different factors encourage innovative work behavior. The most significant contribution to the theoretical development of IWB is that this specific model has never been tested by anyone else, to our knowledge. The model explains 44,5% of the variance of IWB and was statistically significant at $p\text{-value} < 0.001$.

The most important contribution regarding the relationship between organizational climate and IWB is that we have tested different aspects of the climate against IWB. The concepts of innovation and flexibility and the three pillars have limited empirical evidence. Thus, we have provided more extensive research on the relationship between these dimensions and IWB.

Since regulative & normative was the only dimension that was statistically significant, it is recommended that future research investigate which aspects of the climate positively related to IWB. Also, that future research might look into which regulative measures that encourage IWB. Further, we suggest that flexibility is examined more extensively against the innovative performance of the firm rather than IWB. When it comes to psychological safety, the recommendation is to explore the concept against IWB in different countries, due to various employment conditions.

Regarding the relationship between employability and IWB, the most significant discovery is that this concept explains 22,1% (***) of the variance of IWB. This result shows that the individual's personality, abilities, motivation, and attitudes is the main predictor of IWB, according to our results. Since the empirical evidence is limited, the main recommendation is to further explore the interplay between employability and IWB. Possibly, investigate what measures that might affect, for instance, anticipation and optimization dimension (***). Even though our results on job demands are in line with previous findings, some questions have been raised regarding the explanation of why job demands are statistically significant. That is, if the employee contributes towards external oriented innovations, it does not necessarily help the employee with the heavy workload. For example, if an employee contributes towards a new function on a customer product, it does not ease the scope of work tasks. Is it because IWB is characterized as extra-role behavior, and these innovation actions come in addition to ordinary tasks? Thus, we recommend future research to explore why job demands are statistically significant, and we question whether job demands are only a coping mechanism.

Effort-reward fairness is investigated as a direct effect in this thesis and was not statistically significant. The empirical evidence in relation to this concept is that it is often used as a mediator and explored with different assumptions. For further research, we would recommend conducting more extensive research into the different kinds of effort-reward and test their relation to innovative work behavior. It would be interesting to research the differences in reward arrangements between countries, using a qualitative and quantitative approach.

Lastly, a recommendation to future research is to do a more comprehensive study where the sample is greater than 123, to be able to generalize the results for a bigger population. Also, possibly include several countries in the study, and compare the answers between them. Then

it is possible to determine whether employment conditions have an impact on what is encouraging IWB.

4.5 Limitations

Like most other research, also, this thesis has some limitations. Firstly, when we retrieved the questions from other researchers, we did not include all the items from each concept, except for IWB. That might have an impact on our results, and maybe why some results contradict previous research findings. For example, our model only had 16-items of employability out of the 47-items scale from Van Der Heijde and Van Der Heijden (2006). The reason is that we wanted to include as many concepts as possible to be able to get a more holistic view of what encourages IWB. Since we included too many concepts, it can have resulted in less “in-depth” analysis. For example, only including employability, the analysis of the relationship between IWB and employability could have been more thorough. Also, having too many variables have also led to the questionnaire being too extensive. When we tested with the test subjects, then the average time spent was approximately 8-10 minutes, which might be too long already. The actual average time was 11 minutes, which might have resulted in that the 25 answers in progress did not finish the survey. However, we investigated these 25 answers, and none of them stopped at the same place. Thus, it can be another reason why they did not complete the questionnaire. Further, it was said in the inform sheet that the survey would take 8-10 minutes, would have an impact on whether the employees decided to participate or not. That means we could have a greater sample if we excluded some of the concepts. Therefore, including too many independent variables is one of the main limitations of this thesis.

Translation from English to Norwegian

The questions were retrieved from validated measurements by previous researchers and were translated from English to Norwegian. That can lead to misinterpretations of the questions, either because of poor translation or that the questions are not that adaptable to Norwegian. As researchers, we can have misinterpreted the questions in English, which might have led us to translate them wrong. There will always be a risk for misinterpretation in all research. Thus, the decision about translating the questions, we believe we reduced the chance of misinterpretation. For instance, we do not know the English skills of all the employees in the power company. If the participants have a low level of English skills, it could have led to unusable data. Even though it is a risk of misinterpretation, translating the questions was the right decision because we ensured a better outcome, both the results and participation rate.

Social desirability-bias

The questions allowed the participants to answer positively about themselves. One might see what the “right” answer is, which can have resulted in social desirability bias. For example, “I adapt to developments within my organization”, do you agree or disagree? The participant can be tempted to answer more positively than what the reality suggests. On the other hand, they can unconsciously answer more positively about themselves.

External validity

External validity in this thesis is limited, due to only one unit has been included. That means the results cannot be generalized to other companies than Haugaland Kraft. Thus, the sample and number of units should have been greater to generalize the results for other companies in Norway. However, our results can provide insight into what is relevant to test in future research, especially in Norway.

5. Conclusion

This thesis aimed to identify what encourages innovative work behavior at a firm-level by examining the relationship between different variables and IWB. It was expected that organizational climate, employability, job demands, effort reward-fairness, and work engagement was encouraging IWB, due to previous research findings. Based on quantitative analysis, we have found some positive predictors of IWB. We hypothesized that organizational climate would have a positive relationship with IWB because the climate is a predictor for all behaviors in an organization. Our results support this hypothesis by the model's R^2 increased by 6.5% (*) when all the climate dimensions were introduced. In addition, regulative & normative was statistically significant at $p\text{-value} < 0.001$. Thus, the management at Haugaland Kraft can encourage this behavior by setting rules and policies that positively influence IWB. Also, a climate that values innovative thinking is encouraging IWB.

Employability was predicted to have a positive relationship with IWB because of previous research findings and that innovation depends on the competencies that employees possess. According to our results, employability is the main predictor of IWB as the model's R^2 increased by 22,1% (***) when the dimensions were introduced. Anticipation and optimization are the only statistically significant dimension, which shows that the development of the employee's skills and knowledge is encouraging IWB. Even though it depends on the individual, the result indicates that the firm can encourage IWB by training and developing its employees.

Due to previous research findings, a high level of job demands was hypothesized to be positively related to IWB. Our result was in line with the hypothesis. Thus, a high level of job demands is encouraging IWB. That means, IWB is used as a coping mechanism to deal with the heavy workload, or that challenging tasks and goals are encouraging IWB. We are also questioning why a high level of job demands are positively related to IWB, especially regarding external oriented innovations. Thus, we recommend future researchers to do more thorough research on this matter.

Even though not all dimensions and variables included in the model was proven to be statistically significant, it had to some degree encouraging effect on IWB, as the model's R^2

as 44,5% when all was included. Except for work engagement, which was negatively related to IWB, in our results. However, due to the significance level, we cannot determine that these variables are encouraging IWB. In conclusion, we find that organizational climate (regulative & normative), employability (anticipation & optimization), and a high level of job demands are encouraging the beneficial extra-role, innovative work behavior, at Haugaland kraft.

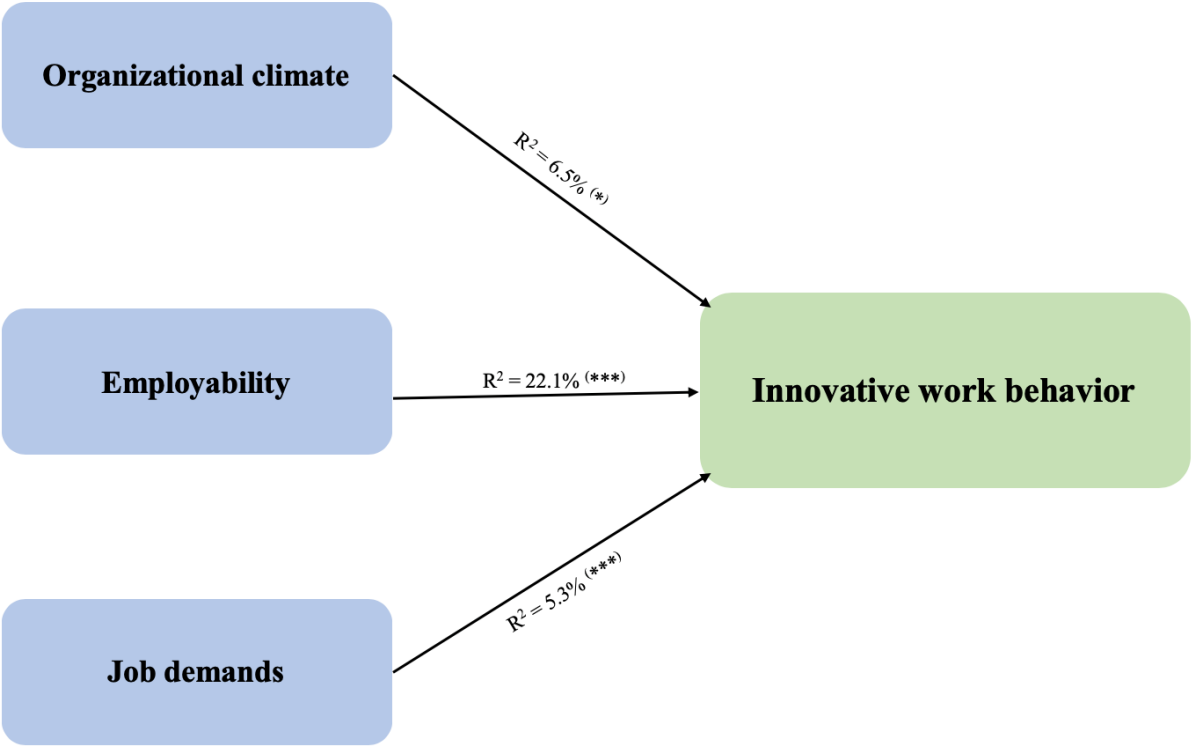


Figure 24 - *The final model of what encourages IWB*

References

- Adams, J., Khan, H. T., & Raeside, R. (2014). *Research methods for business and social science students (2nd ed.)*. India: SAGE Publications.
- Agarwal, U. A. (2014). Linking justice, trust and innovative work behaviour to work engagement. *Personnel Review*, 43(1), 41-73.
doi:<http://dx.doi.org.ezproxy.uis.no/10.1108/PR-02-2012-0019>
- Agarwal, U. A., Datta, S., Blake-Beard, S., & Bhargava, S. (2012). Linking LMX, innovative work behaviour and turnover intentions: The mediating role of work engagement. *The Career Development International*, 17(3), 208-230. <https://doi.org/10.1108/13620431211241063>
- Bakker, A. B., & Demerouti, E. (2008). Towards a model of work engagement. *Career development international*.
- Bakker, A. B., & Leiter, M. P. (2010). *Work Engagement: A Handbook of Essential Theory and Research*. Hove, United Kingdom: Taylor & Francis Group.
- Bessant, J., & Tidd, J. (2015). *Innovation and Entrepreneurship (3rd ed)*. New Jersey: John Wiley Sons Inc.
- Billett, S. (2012). Explaining innovation at work: a socio-personal account. In S, Hyrup., M, Bonnafous-Boucher., C, Hasse., M, Lotz., & K, Miller (Eds.). *Employee driven innovation: a new approach* (p.92-107). London: Palgrave Macmillian.
- Bos-Nehles, A., Renkema, M., & Janssen, M. (2017). HRM and innovative work behaviour: A systematic literature review. *Personnel review*.
- Bunce, D., & West, M. (1994). Changing work environments: Innovative coping responses to occupational stress. *Work & Stress*, 8(4), 319-331.

- Busenitz, L. W., Gómez, C., & Spencer, J. W. (2000). Country institutional profiles: Unlocking entrepreneurial phenomena. *Academy of Management Journal*, 43(5), 994-1003.
- Carmines, E. G., & Zeller, R. A. (1979). *Reliability and validity assessment*. Newbury Park, Calif: Sage Publications Inc.
- Chang, J. C., Hsiao, H. C., Chen, S. C., Chen, C. P., Chou, C. M., & Shen, C. H. (2011). The role of perception of effort-reward in the relationship between team cohesion and innovative work behaviour. In *Second WIETE Annual Conference on Engineering and Technology Education, Pattaya, Thailand*.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: Harper and Row.
- Dahlin, E. C. (2014). The sociology of innovation: Organizational, environmental, and relative perspectives. *Sociology Compass*, 8(6), 671-687.
- Davila, A., & Epstein, M. J. (2014). *The innovation paradox why good businesses kill breakthroughs and how they can change*. San Francisco, Calif: Berrett-Koehler Publishers.
- Dediu, V., Leka, S., & Jain, A. (2018). Job demands, job resources and innovative work behaviour: a European Union study. *European Journal of Work and Organizational Psychology*, 27(3), 310-323.
- De Jong, J., & Den Hartog, D. (2010). Measuring innovative work behaviour. *Creativity and Innovation Management*, 19(1), 23-36.
- De Spiegelaere, S., Van Gyes, G., Vandekerckhove, S., & Hootegem, G. V. (2012). Job design and innovative work behavior: enabling innovation through active or low-strain jobs?. Available at SSRN 2158618.

- Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, 44(2), 350-383.
- Fagerberg, J. Innovation: A guide to the literature (2005). In Fagerberg, J., Mowery, D, C., Nelson, R, R. *The oxford handbook of innovation*. (Pages 1-26). Oxford: Oxford university press.
- Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). London: SAGE Publications Ltd.
- Friis, O., Holmgren, J., & Eskildsen, J. K. (2016). A strategy model–better performance through improved strategy work. *Journal of Modelling in Management*.
- Garcia-Garcia, I., Benítez Ramos, V., Cobos Serrano, J.L., Ramos Cobos, M.C., Souza, A. (2011). Nursing personnel’s perceptions of the organizational climate in public and private hospitals in Spain. *International Nursing Review*, 58, 243-241.
- Gault, F. (2016). Defining and measuring innovation in all sectors of the economy: policy relevance. In *Proceedings of the OECD Blue Sky Forum III, Ghent, Belgium* (pp. 19-21).
- Gong, Y., Cheung, S. Y., Wang, M., & Huang, J. C. (2012). Unfolding the proactive process for creativity: Integration of the employee proactivity, information exchange, and psychological safety perspectives. *Journal of management*, 38(5), 1611-1633.
- Gorodnichenko, Y., Svejnar, J., & Terrell, K. (2010). Globalization and Innovation in Emerging Markets. *American Economic Journal: Macroeconomics*, 2(2), pp. 194-226. doi:10.1257/mac.2.2.194.
- Gravetter, F. J., & Wallnau, L. B. (2014). *Essentials of statistics for the behavioral sciences*. (8th ed.). Wadsworth: Cengage Learning.

- Hernández, P. M., Salanova, M., & Peiró, J. M. (2007). Job demands, job resources and individual innovation at work: Going beyond Karasek's model?. *Psicothema*, 19(4), 621-626.
- Holt, N., Bremer, A., Sutherland, E., Vliek, M., Passer, M., & Smith, R. (2012). *Psychology the science of mind and behavior* (2nd ed.). Berkshire: McGraw-Hill.
- Hyde, K.F. (2000). Recognising deductive processes in qualitative research. *Qualitative Market Research: An international journal*, 3(2), p. 82-89.
- Jacobsen, D. I., & Thorsvik, J. (2013). *Hvordan organisasjoner fungerer* (4.utg.). Bergen: Fagbokforlaget.
- Janssen, O. (2000). Job demands, perceptions of effort-reward fairness and innovative work behaviour. *Journal of Occupational and organizational psychology*, 73(3), 287-302.
- Janssen, O. (2004). How fairness perceptions make innovative behavior more or less stressful. *Journal of organizational behavior*, 25(2), 201-215.
- Javed, B., Naqvi, S., Khan, A., Arjoon, S., & Tayyeb, H. (2019). Impact of inclusive leadership on innovative work behavior: The role of psychological safety. *Journal of Management & Organization*, 25(1), 117-136. doi:10.1017/jmo.2017.3.
- Johannessen, A. (2009). *Introduksjon til SPSS* (4. utg.). Oslo: Abstrakt forlag.
- Johannessen, A., Christoffersen, L., & Tufte, P. A. (2011). *Forskningsmetode for økonomisk-administrative fag*. Oslo: Abstrakt Forlag AS.
- Kanter, R. M. (1988). When a thousand flowers bloom: Structural, collective, and social conditions for innovation in organizations. *Knowledge Management and Organisational Design*, 10, 93-131.

- Kanter, R. M. (2000). When a thousand flowers bloom: Structural, Collective, and Social conditions for innovation in organization. In Richard Swedberg. *Entrepreneurship: The Social Science View* (Pages 167-210)
- Kark, R., & Carmeli, A. (2009). Alive and creating: The mediating role of vitality and aliveness in the relationship between psychological safety and creative work involvement. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 30(6), 785-804.
- Kesting, P., & Ulhøi, J. P. (2010). Employee-driven innovation: extending the license to foster innovation. *Management decision*, 48(1), 65-84.
- Keupp, M. M., Palmié, M., & Gassmann, O. (2012). The strategic management of innovation: A systematic review and paths for future research. *International journal of management reviews*, 14(4), 367-390.
- Krishnaswami, O., & Satyaprasad, B. (2010). *Business research methods*. Retrieved from <https://ebookcentral-proquest-com.ezproxy.uis.no>.
- Lai, L. (2011). Kompetansemobilisering og egenmotivasjon. *Magma 0311*. Retrived from <https://biopen.bi.no/bitstream/handle/11250/93376/Lai%20Magma%200311.pdf?sequence=1&fbclid=IwAR06jfQwPOrW23d67AgDLg5kbi8XCvwGMUQxXycA8WrJSl4QuN5cUAxCulc>
- Lazonick, W. (2005). The innovative firm. In Fagerberg, J., Mowery, D. C., & Nelson, R. R. *The oxford handbook of innovation*. (Pages 29-55). Oxford: Oxford university press.
- Montani, F., Odoardi, C., & Battistelli, A. (2014). Individual and contextual determinants of innovative work behaviour: Proactive goal generation matters. *Journal of Occupational and Organizational Psychology*, 87(4), 645-670.
- Mumford, M. D. (2000). Managing Creative People: Strategies and Tactics for Innovation. *Human Resource Management Review*, 10(3), pp. 313-351. doi:10.1016/S1053-4822(99)00043-1.

- Pallant, J. (2013). *SPSS SURVIVAL MANUAL: A step by step guide to data analysis using IBM SPSS* (5th ed.). UK: McGraw-Hill Education.
- Patterson, M. G., West, M. A., Shackleton, V. J., Dawson, J. F., Lawthom, R., Maitlis, S., & Wallace, A. M. (2005). Validating the organizational climate measure: links to managerial practices, productivity and innovation. *Journal of organizational behavior*, 26(4), 379-408.
- Patterson, F., Kerrin, M., Gatto-Roissard, G., & Coan, P. (2009). *Everyday innovation: How to enhance innovative working in employees and organisations*. London: Nesta. Retrieved from https://media.nesta.org.uk/documents/everyday_innovation.pdf.
- Porta, M. (Ed.). (2014). *A dictionary of epidemiology* (6th ed.). Great Britain: Oxford University Press. Retrieved from <https://ebookcentral-proquest-com.ezproxy.uis.no>.
- Roos, G., Von Krogh, G., & Roos, J. (2010). *Strategi – en innføring*. Bergen: Fagbokforlaget.
- Runco, M. A., & Pritzker, S. R. (2011). *Encyclopedia of Creativity: Two-Volume Set : Online Version*. San Diego, UNITED STATES: Elsevier Science & Technology.
- Sachdeva, J. (2008). *Business research methodology*. New Dehli: Global Media Publisher. Retrieved from <https://ebookcentral-proquest-com.ezproxy.uis.no>.
- Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and psychological measurement*, 66(4), 701-716.
- Schumpeter, J. (1934). *The theory of Economic Development*. Cambridge, Mass.: Harvard University Press.
- Scott, R. W. (2001). Constructing an Analytical framework, I: Three Pillars of Institutions. In Scott, R. W. *Institutions and Organizations*. (Pages 47-68). Sage Publications.

- Scott, S. G., & Bruce, R. A. (1994). Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of management journal*, 37(3), 580-607.
- Sharifirad, M. S. (2013). Transformational leadership, innovative work behavior, and employee well-being. *Global Business Perspectives*, 1(3), 198-225.
- Siddiqi, M. A. (2015). Employee innovative work behavior and its roots in their work engagement: An Indian experience. *Pranjana: The Journal of Management Awareness*, 18(2), 1-18.
- Stoffers, J. M., Van der Heijden, B. I., & Jacobs, E. A. (2018). Employability and innovative work behaviour in small and medium-sized enterprises. *The International Journal of Human Resource Management*, 1-28.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic management journal*, 18(7), 509-533.
- Tidd, J., & Bessant, J. R. (2014). *Strategic innovation management*. Hoboken: Wiley.
- Treviño, L. & Nelson, K. (1999). *Managing Business Ethics: Straight Talk About How To Do It Right*. New York: John Wiley & Sons.
- Van der Heijde, C. M., & Van der Heijden, B. I. (2005). The development and psychometric evaluation of a multi-dimensional measurement instrument of employability—and the impact of aging. In *International congress series* (Vol. 1280, pp. 142-147). Elsevier.
- Van Der Heijde, C. M. V. D. H., Beatrice I.J.M. (2006). A competence-based and multidimensional operationalization and measurement of employability. *Human Resource Management: Published in Cooperation with the School of Business Administration, The University of Michigan and in alliance with the Society of Human Resources Management*, 45(3), 449-476.

- Wang, J., Leung, K., & Zhou, F. (2014). A dispositional approach to psychological climate: Relationships between interpersonal harmony motives and psychological climate for communication safety. *Human relations*, 67(4), 489-515.
- Wang, Y. X., Yang, Y. J., Wang, Y., Su, D., Li, S. W., Zhang, T., & Li, H. P. (2019). The mediating role of inclusive leadership: Work engagement and innovative behaviour among Chinese head nurses. *Journal of nursing management*, 27(4), 688-696.
- Weathington, B. L., Cunningham, C. J. L., & Pittenger, D. J. (2012). *Understanding business research*. Hoboken, New Jersey: John Wiley & Sons. Retrieved from <https://ebookcentral-proquest-com.ezproxy.uis.no>.
- Wilson, J. (2014). *Essentials of business research: A guide to doing your research project* (2nd ed.). Great Britain: Sage Publication.
- Åmo, B.W. (2006). The link between organizational institutional frameworks for continued entrepreneurship and internal and external oriented innovation behavior among employees. Retrieved from our supervisor (*not published*)

Appendix A – The survey (Norwegian)

Masteroppgave - Hva oppmuntrer til innovasjonsatferd?

Vil du delta i prosjektet – «Hva oppmuntrer til innovasjonsatferd?»

Dette prosjektet gjennomføres i forbindelse med vår masteravhandling ved Handelshøyskolen Universitetet i Stavanger (HHUis) og formålet er å se hvilke faktorer som stimulerer til innovativ atferd på bedriftsnivå. Innovativ atferd (utviklingsatferd) innebærer bl.a. at en ser muligheter for forbedring av noe eksisterende (produkter, tjenester, interne rutiner etc.) og/eller nyskaping.

Ansvarlige for prosjektet er Malene Hognaland Medhaug og Henriette Omberg Mossige. Vi har inngått avtale med din bedrift om å gjennomføre denne spørreundersøkelsen, og derfor får du spørsmål om å delta. Innsamlet data vil bli behandlet med konfidensialitet og kun være tilgjengelig for de ansvarlige for prosjektet og veileder Tatiana A. Iakovleva. Det vil si at bedriften IKKE vil få innsyn eller tilgang til data, men kun resultatene som blir presentert i masteroppgaven.

Hva innebærer det for deg å delta?

Det er frivillig å delta i prosjektet. Hvis du velger å delta i prosjektet, innebærer det at du fyller ut et spørreskjema. Det vil ta deg ca. 8-10 minutter. Spørreskjemaet inneholder spørsmål om bl.a. alder, kjønn, arbeidserfaring, utdanningsnivå og avdeling (enhet). I resultatene vil det ikke være mulig å bli identifisert på grunn av at disse dataene vil bli grovkategorisert. Masteroppgaven leveres etter planen 15.juni 2020 og data fra undersøkelsen vil bli slettet i utgangen av 2020.

Dine rettigheter:

Så lenge du kan identifiseres i datamaterialet, har du rett til:

- Innsyn i hvilke personopplysninger som er registrert om deg
- å få rettet personopplysninger om deg,
- få slettet personopplysninger om deg,
- få utlevert en kopi av dine personopplysninger (dataportabilitet), og
- å sende klage til personvernombudet eller Datatilsynet om behandlingen av dine personopplysninger.

Hvor kan jeg finne ut mer?

Hvis du har spørsmål om prosjektet, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:

- Universitet i Stavanger ved Tatiana A. Iakovleva, Mail: tatiana.a.iakovleva@uis.no, Henriette O. Mossige, Mail: henriette_omberg@hotmail.no, Malene H. Medhaug, Mail: malenemedhaug@gmail.com
- Vårt personvernombud: personvernombud@uis.no, Universitet i Stavanger
- NSD - Norsk senter for forskningsdata AS, på e-post (personverntjenester@nsd.no) eller telefon: 55 58 21 17

Vi behandler opplysninger om deg basert på ditt samtykke.

* 1. Samtykkeerklæring:

Det er mulig å trekke seg underveis i spørreundersøkelsen og svarene dine vil da bli slettet. Du trekker deg ved å trykke "avslutt" øverst til høyre. Når spørreundersøkelsen er fullført, er det ikke mulig å trekke tilbake samtykke fordi det ikke kan spores tilbake til deg. Vi samler ikke inn e-post eller ip-adresser.

Jeg har mottatt og forstått informasjon om prosjektet «What encourages innovative work behavior at a firm-level?». **Jeg samtykker til:**

Å delta i spørreundersøkelse og at mine opplysninger blir oppbevart til utgangen av 2020

6. Antall år med arbeidserfaring?

- Under 5 år
- 5 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- Over 40 år

7. Hvor mange bedrifter har du jobbet for?

- 1
- 2
- 3
- 4
- 5
- Over 5

8. Antall år med erfaring innenfor nåværende kompetanseområde?

- Under 5 år
- 5 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- Over 40 år

9. Antall år med erfaring innenfor andre kompetanseområder?

- Under 5 år
- 5 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- Under 40 år

10. Hvilken enhet/selskap hører du til?

- Fiber
- Energi
- Nett
- Kommunikasjon & kundetjenester
- Utvikling & digitalisering
- Økonomi/HR

Masteroppgave - Hva oppmuntrer til innovasjonsatferd?

Del B - Kompetanse

11. Vennligst oppgi i hvilken grad du kjenner deg igjen i følgende påstander:

	I liten grad		I noen grad		I stor grad
Jeg anser meg selv kompetent til å engasjere meg i samtaler som går i dybden av mitt kompetanseområde	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg anser meg selv som kompetent til å se når kunnskapen min ikke er tilstrekkelig nok til å utføre en arbeidsoppgave eller løse et problem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg stoler på at min kompetanse er tilstrekkelig innenfor mitt ekspertiseområde	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Vennligst oppgi i hvilken grad du kjenner deg igjen i følgende påstander:

	I liten grad		I noen grad		I stor grad
Jeg bruker mye tid på å forbedre min kunnskap og ferdigheter som er til nytte for arbeidet mitt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg er opptatt av å kontinuerlig utvikle meg selv	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg er opptatt av å ta i bruk kunnskap og ferdigheter jeg nylig har lært	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Vennligst oppgi i hvilken grad du kjenner deg igjen i følgende påstander:

	I liten grad		I noen grad		I stor grad
Jeg har lett for å tilpasse meg endringer på arbeidsplassen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg tilpasser meg utviklingen i organisasjonen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg forutser raskt hvordan jeg kan dra nytte av endringer på arbeidsplassen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Vennligst oppgi i hvilken grad du kjenner deg igjen i følgende påstander:

	I liten grad		I noen grad		I stor grad
Jeg er en aktiv deltager i å oppnå organisasjonens/avdelingens mål	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg gjør det lille ekstra for organisasjonen/avdelingen utenfor mine ansvarsområder	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
På jobb tar jeg initiativ til å dele ansvar med kollegaene mine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg deler min erfaring og kunnskap med andre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. Vennligst oppgi i hvilken grad du kjenner deg igjen i følgende påstander:

	I liten grad		I noen grad		I stor grad
Jeg føler på arbeidsrelatert stress	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jobb og privatliv er i balanse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg oppnår en balanse i å veksle mellom å nå mine egne arbeidsmål og å støtte mine kollegaer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Masteroppgave - Hva oppmuntrer til innovasjonsatferd?

Del C - Arbeidskrav

16. Vennligst oppgi hvor ofte du opplever:

	Aldri		Av og til		Svært ofte
Har du for mye arbeid å gjøre?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jobber du under tidspress?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Har du problemer med arbeidsmengden?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. Vennligst oppgi hvor ofte du opplever:

	Aldri		Av og til		Svært ofte
Jeg gir mye tid og oppmerksomhet til organisasjonen, men får veldig lite takknemlighet og anerkjennelse.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg føler meg urettferdig behandlet i jobben min	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg investerer mer i jobben min enn jeg får i retur	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Masteroppgave - Hva oppmuntrer til innovasjonsatferd?

Del D - Innovasjon

Når det gjelder disse spørsmålene, vennligst ta hensyn til at utvikling og forbedring av noe eksisterende innebærer produkter, tjenester, rutiner, eksterne og interne prosesser, nye produksjonsmetoder, nye markeder og nye måter å organisere. Gjelder også det som er nytt for bedriften.

18. Vennligst oppgi hvor ofte du gjør følgende aktiviteter på din arbeidsplass:

	Aldri		Av og til		Svært ofte
Kommer på nye ideer for vanskelige problemer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Søker etter nye arbeidsmetoder, teknikker eller instrumenter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Finner originale/nyskapende løsninger for problemer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. Vennligst oppgi hvor ofte du gjør følgende aktiviteter på din arbeidsplass:

	Aldri		Av og til		Svært ofte
Finner og mobiliserer støtte for dine ideer for utvikling/forbedring av noe eksisterende	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Skaffer godkjenning for ideer for utvikling/forbedring av noe eksisterende	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gjøre nøkkelpersoner i organisasjonen entusiastiske for dine ideer om utvikling/forbedring av noe eksisterende	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20. Vennligst oppgi hvor ofte du gjør følgende aktiviteter på din arbeidsplass:

	Aldri		Av og til		Svært ofte
Transformerer ideer om nyskapning og/eller forbedring av noe eksisterende til virkelighet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Introduserer ideer om nyskapning og/eller forbedring av noe eksisterende i arbeidsmiljøet på en systematisk måte	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Evaluerer nytteverdien av ideer som er nyskapende eller forbedring av noe eksisterende	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Masteroppgave - Hva oppmuntrer til innovasjonsatferd?

Del E - Organisasjonsklima

21. Vennligst oppgi hvor enig eller uenig du er i følgende påstander:

	Uenig		Verken enig eller uenig		Enig
Nye ideer blir lett akseptert her	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Denne organisasjonen er rask til å respondere når det må gjøres endringer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Det er lett å få hjelp og støtte når ideer skal utvikles til virkelighet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Både ledelsen og ansatte leter etter nye perspektiver på et problem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. Vennligst oppgi hvor enig eller uenig du er i følgende påstander:

	Uenig		Verken enig eller uenig		Enig
Ledelsen oppmuntrer de ansatte til ta initiativ til utvikling/forbedring av noe eksisterende	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ledelsen oppmuntrer til å prøve nye tilnærminger til et problem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ledelsen er villig til å gi finansiell støtte til initiativer om forbedring/utvikling fra ansatte	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. Vennligst oppgi hvor enig eller uenig du er i følgende påstander:

	Uenig		Verken enig eller uenig		Enig
Mine kolleger sitter på den nødvendige kompetansen for å delta på utviklingsprosjekter (innovasjon)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mine kolleger vet hvilke ideer for utvikling og forbedring som vil fungere i praksis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mine kolleger vet hvordan de skal iverksette et utvikling og/eller forbedringsprosjekt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. Vennligst oppgi hvor enig eller uenig du er i følgende påstander:

	Uenig		Verken enig eller uenig		Enig
I min organisasjon blir innovasjon (utvikling/forbedring) sett på som "veien til suksess" i karrieren	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
En får status og respekt ved å bidra til nyskaping og/eller forbedring i organisasjonen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Det å bidra i prosjekter om nyskaping og/eller forbedring av noe eksisterende er et respektert karrieresteg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

25. Vennligst oppgi hvor enig eller uenig du er i følgende påstander:

	Uenig		Verken enig eller uenig		Enig
Du og kolleger i ditt arbeidsmiljø har lov til å ta opp vanskelige problemer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hvis du gjør en feil i ditt arbeidsmiljø, blir det ofte holdt imot deg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg opplever det som trygt å utfordre og stille spørsmål ved etablerte sannheter i mitt arbeidsmiljø	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ingen i ditt arbeidsmiljø vil bevisst handle på en måte som undergraver din innsats	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Masteroppgave - Hva oppmuntrer til innovasjonsatferd?

Del F - Motivasjon og arbeidsglede

26. Vennligst oppgi hvor enig eller uenig du er i følgende påstander:

	Uenig		Verken enig eller uenig		Enig
På jobben føler jeg meg full av energi	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Når jeg står opp om morgenen, har jeg lyst til å gå på jobb	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
På jobben min holder jeg alltid ut, selv når ting ikke går bra	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

27. Vennligst oppgi hvor enig eller uenig du er i følgende påstander:

	Uenig		Verken enig eller uenig		Enig
Jobbe min er meningsfull og har et formål	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jobben min inspirerer meg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For meg er jobben min utfordrende	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

28. Vennligst oppgi hvor enig eller uenig du er i følgende påstander:

	Uenig		Verken enig eller uenig		Enig
Tiden flyr når jeg jobber	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg blir revet med når jeg jobber	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg er ofte oppslukt i jobben min	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Masteroppgave - Hva oppmuntrer til innovasjonsatferd?

Ansvar

29. Har du leder- eller mellomleder ansvar i bedrift din?

- Ja
 Nei

Masteroppgave - Hva oppmuntrer til innovasjonsatferd?

Del G - Bedriftens prestasjon

30. Vennligst oppgi i hvilken grad din bedrift har introdusert noe helt nytt for selskapet eller betydelig forbedring for følgende:

	I liten grad		I noen grad		I stor grad
Produkter & tjenester (For eks. Nye produkter/tjenester, forbedret versjoner, endringer i brukervennlighet)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Metoder/ prosesser (For eks. produksjonsmetode, leveringsmetode, endringer i teknologi, utstyr og/eller programvare)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Markedsføring (For eks. endringer i design av en vare eller tjeneste, endringer i emballasjen til en vare, ny strategi for å målrette mot en ny kundegruppe eller markedssegment)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

31. Vennligst oppgi i hvilken grad disse utviklingene/forbedringene var nye for bransjen eller nytt for markedet:

	I liten grad		I noen grad		I stor grad
Nytt for markedet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kun nytt for bedriften	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Masteroppgave - Hva oppmuntrer til innovasjonsatferd?

Tusen takk!!

Takk for besvarelsen - Vi setter utrolig stor pris på at du tok deg tid til å svare på denne undersøkelsen.

Ha en fin dag videre!

Appendix B – Approval from NSD

NSD sin vurdering

Prosjekttittel

Masteroppgave - "What encourages innovative work behavior at a firm-level?"

Referansenummer

219710

Registrert

13.02.2020 av Malene Hognaland Medhaug - mh.medhaug@stud.uis.no

Behandlingsansvarlig institusjon

Universitetet i Stavanger / Handelshøgskolen ved UiS

Prosjektansvarlig (vitenskapelig ansatt/veileder eller stipendiat)

Tatiana Aleksandrovna Iakovleva, tatiana.a.iakovleva@uis.no, tlf: 51831590

Type prosjekt

Studentprosjekt, masterstudium

Kontaktinformasjon, student

Malene Hognaland Medhaug, malenemedhaug@gmail.com, tlf: 97119786

Prosjektperiode

06.01.2020 - 30.06.2020

Status

14.05.2020 - Vurdert

Vurdering (2)

14.05.2020 - Vurdert

NSD har vurdert endringen registrert 14.05.2020.

Vi har nå registrert 30.06.2020 som ny sluttdato for forskningsperioden.

NSD vil følge opp ved ny planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Lykke til videre med prosjektet!

Tlf. Personverntjenester: 55 58 21 17 (tast 1)

21.02.2020 - Vurdert

Det er vår vurdering at behandlingen av personopplysninger i prosjektet vil være i samsvar med personvernlovgivningen så fremt den gjennomføres i tråd med det som er dokumentert i meldeskjemaet 21.02.2020 med vedlegg, samt i meldingsdialogen mellom innmelder og NSD. Behandlingen kan starte.

MELD VESENTLIGE ENDRINGER

Dersom det skjer vesentlige endringer i behandlingen av personopplysninger, kan det være nødvendig å melde dette til NSD ved å oppdatere meldeskjemaet. Før du melder inn en endring, oppfordrer vi deg til å lese om hvilke type endringer det er nødvendig å melde: https://nsd.no/personvernombud/meld_prosjekt/meld_endringer.html

Du må vente på svar fra NSD før endringen gjennomføres.

TYPE OPPLYSNINGER OG VARIGHET

Prosjektet vil behandle alminnelige kategorier av personopplysninger frem til 15.06.2020.

LOVLIG GRUNNLAG

Prosjektet vil innhente samtykke fra de registrerte til behandlingen av personopplysninger. Vår vurdering er at prosjektet legger opp til et samtykke i samsvar med kravene i art. 4 og 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse som kan dokumenteres, og som den registrerte kan trekke tilbake. Lovlig grunnlag for behandlingen vil dermed være den registrertes samtykke, jf. personvernforordningen art. 6 nr. 1 bokstav a.

PERSONVERNPRINSIPPER

NSD vurderer at den planlagte behandlingen av personopplysninger vil følge prinsippene i personvernforordningen om:

- lovlighet, rettferdighet og åpenhet (art. 5.1 a), ved at de registrerte får tilfredsstillende informasjon om og samtykker til behandlingen
- formålsbegrensning (art. 5.1 b), ved at personopplysninger samles inn for spesifikke, uttrykkelig angitte og berettigede formål, og ikke viderebehandles til nye uforenlige formål
- dataminimering (art. 5.1 c), ved at det kun behandles opplysninger som er adekvate, relevante og nødvendige for formålet med prosjektet
- lagringsbegrensning (art. 5.1 e), ved at personopplysningene ikke lagres lengre enn nødvendig for å oppfylle formålet

DE REGISTRERTES RETTIGHETER

Så lenge de registrerte kan identifiseres i datamaterialet vil de ha følgende rettigheter: åpenhet (art. 12), informasjon (art. 13), innsyn (art. 15), retting (art. 16), sletting (art. 17), begrensning (art. 18), underretning (art. 19), dataportabilitet (art. 20).

NSD vurderer at informasjonen som de registrerte vil motta oppfyller lovens krav til form og innhold, jf. art. 12.1 og art. 13.

Vi minner om at hvis en registrert tar kontakt om sine rettigheter, har behandlingsansvarlig institusjon plikt til å svare innen en måned.

FØLG DIN INSTITUSJONS RETNINGSLINJER

NSD legger til grunn at behandlingen oppfyller kravene i personvernforordningen om riktighet (art. 5.1 d), integritet og konfidensialitet (art. 5.1 f) og sikkerhet (art. 32).

Survey Monkey og OneDrive er databehandlere i prosjektet. NSD legger til grunn at behandlingen oppfyller kravene til bruk av databehandler, jf. art 28 og 29.

For å forsikre dere om at kravene oppfylles, må dere følge interne retningslinjer og eventuelt rådføre dere med behandlingsansvarlig institusjon.

OPPFØLGING AV PROSJEKTET

NSD vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Lykke til med prosjektet!

Appendix C – Factor and reliability analysis output from SPSS

➔ Factor Analysis – Innovative work behavior

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
IWB.IdeaG.Q1	3,3333	,82647	123
IWB.IdeaG.Q2	3,4959	,93541	123
IWB.IdeaG.Q3	3,1301	,89589	123
IWB.IdeaProm.Q1	3,0732	,91590	123
IWB.Ideaprom.Q2	2,9756	1,04382	123
IWB.Ideaprom.Q3	2,9024	,97858	123
IWB.Idearel.Q1	2,9106	,94962	123
IWB.Idearel.Q2	2,8211	1,00027	123
IWB.Idearel.Q3	2,8862	,96838	123

KMO and Bartlett's Test

Kaiser–Meyer–Olkin Measure of Sampling Adequacy.		,889
Bartlett's Test of Sphericity	Approx. Chi-Square	782,688
	df	36
	Sig.	,000

Communalities

	Initial	Extraction
IWB.IdeaG.Q1	1,000	,540
IWB.IdeaG.Q2	1,000	,556
IWB.IdeaG.Q3	1,000	,560
IWB.IdeaProm.Q1	1,000	,660
IWB.Ideaprom.Q2	1,000	,670
IWB.Ideaprom.Q3	1,000	,655
IWB.Idearel.Q1	1,000	,734
IWB.Idearel.Q2	1,000	,680
IWB.Idearel.Q3	1,000	,590

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5,643	62,705	62,705	5,643	62,705	62,705
2	,918	10,201	72,906			
3	,731	8,121	81,027			
4	,438	4,869	85,896			
5	,375	4,167	90,064			
6	,299	3,319	93,382			
7	,267	2,967	96,350			
8	,179	1,990	98,340			
9	,149	1,660	100,000			

Extraction Method: Principal Component Analysis.

Reliability – IWB

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	123	100,0
	Excluded ^a	0	,0
	Total	123	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,925	,925	9

Component Matrix^a

	Component 1
IWB.Idearel.Q1	,857
IWB.Idearel.Q2	,825
IWB.Ideaprom.Q2	,818
IWB.IdeaProm.Q1	,812
IWB.Ideaprom.Q3	,809
IWB.Idearel.Q3	,768
IWB.IdeaG.Q3	,748
IWB.IdeaG.Q2	,746
IWB.IdeaG.Q1	,735

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

➔ **Factor Analysis – Innovation & Flexibility (Org.clim)**

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
Orgclim.Inn.flex.Q1	3,2195	1,09047	123
Orgclim.Inn.flex.Q2	2,9919	1,16995	123
Orgclim.Inn.flex.Q3	3,0488	1,00697	123
Orgclim.Inn.flex.Q4	3,2602	,97373	123

KMO and Bartlett's Test

Kaiser–Meyer–Olkin Measure of Sampling Adequacy.		,830
Bartlett's Test of Sphericity	Approx. Chi-Square	261,966
	df	6
	Sig.	,000

Communalities

	Initial	Extraction
Orgclim.Inn.flex.Q1	1,000	,754
Orgclim.Inn.flex.Q2	1,000	,641
Orgclim.Inn.flex.Q3	1,000	,759
Orgclim.Inn.flex.Q4	1,000	,805

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings		
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,960	73,988	73,988	2,960	73,988	73,988
2	,460	11,504	85,492			
3	,331	8,283	93,775			
4	,249	6,225	100,000			

Extraction Method: Principal Component Analysis.

Component Matrix^a

	Component 1
Orgclim.Inn.flex.Q4	,897
Orgclim.Inn.flex.Q3	,871
Orgclim.Inn.flex.Q1	,868
Orgclim.Inn.flex.Q2	,800

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Reliability – Inn and flex (org.clim)

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	123	100,0
	Excluded ^a	0	,0
	Total	123	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,878	,882	4

➔ **Factor Analysis – Regulative, Cognitive, and Normative (Org.clim)**

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
Orgclim.reg.Q1	3,3415	1,15822	123
Orgclim.reg.Q2	3,2520	1,07577	123
Orgclim.reg.Q3	3,2520	,97168	123
Orgclim.cog.Q1	3,8211	,96693	123
Orgclim.cog.Q2	3,6829	,96085	123
Orgclim.cog.Q3	3,3659	,92567	123
Orgclim.norm.Q1	3,2520	1,10582	123
Orgclim.norm.Q2	3,3089	1,12447	123
Orgclim.norm.Q3	3,2195	1,05222	123

Reliability – Reg, cog and norm.

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	123	100,0
	Excluded ^a	0	,0
	Total	123	100,0

a. Listwise deletion based on all variables in the procedure.

KMO and Bartlett's Test

Kaiser–Meyer–Olkin Measure of Sampling Adequacy.		,797
Bartlett's Test of Sphericity	Approx. Chi-Square	789,535
	df	36
	Sig.	,000

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,872	,869	9

Communalities

	Initial	Extraction
Orgclim.reg.Q1	1,000	,745
Orgclim.reg.Q2	1,000	,755
Orgclim.reg.Q3	1,000	,576
Orgclim.cog.Q1	1,000	,831
Orgclim.cog.Q2	1,000	,845
Orgclim.cog.Q3	1,000	,667
Orgclim.norm.Q1	1,000	,620
Orgclim.norm.Q2	1,000	,732
Orgclim.norm.Q3	1,000	,740

Extraction Method: Principal Component Analysis.

Rotated Component Matrix^a

	Component	
	1	2
Orgclim.reg.Q2	,862	
Orgclim.reg.Q1	,852	
Orgclim.norm.Q3	,851	
Orgclim.norm.Q2	,843	
Orgclim.reg.Q3	,759	
Orgclim.norm.Q1	,749	
Orgclim.cog.Q1		,910
Orgclim.cog.Q2		,909
Orgclim.cog.Q3		,794

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Total Variance Explained

Component	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4,529	50,318	50,318	4,529	50,318	50,318	4,098	45,534	45,534
2	1,982	22,027	72,345	1,982	22,027	72,345	2,413	26,812	72,345
3	,856	9,507	81,852						
4	,489	5,430	87,282						
5	,407	4,519	91,801						
6	,316	3,506	95,307						
7	,184	2,049	97,356						
8	,126	1,397	98,752						
9	,112	1,248	100,000						

Extraction Method: Principal Component Analysis.

➔ Factor Analysis – Psychological safety

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
Orgclim.psycS.Q1	4,0650	,99787	123
Orgclim.psycS.Q3	3,6911	1,12447	123
Orgclim.psycS.Q4	3,6260	1,15516	123

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,654
Bartlett's Test of Sphericity	Approx. Chi-Square	105,666
	df	3
	Sig.	,000

Communalities

	Initial	Extraction
Orgclim.psycS.Q1	1,000	,763
Orgclim.psycS.Q3	1,000	,748
Orgclim.psycS.Q4	1,000	,540

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings		
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,051	68,382	68,382	2,051	68,382	68,382
2	,625	20,820	89,203			
3	,324	10,797	100,000			

Extraction Method: Principal Component Analysis.

Component Matrix^a

	Component 1
Orgclim.psycS.Q1	,874
Orgclim.psycS.Q3	,865
Orgclim.psycS.Q4	,735

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Reliability – Psych.safety

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	123	100,0
	Excluded ^a	0	,0
	Total	123	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,760	,766	3

→ Factor Analysis – Employability

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
Empl.occ.Q1	4,3089	,86014	123
Empl.occ.Q3	4,1382	,70508	123
Empl.anti.opti.Q1	3,6341	,99398	123
Empl.anti.opti.Q2	3,9187	,86454	123
Empl.anti.opti.Q3	4,1301	,74613	123
Empl.per.flex.Q1	4,0488	,76666	123
Empl.per.flex.Q2	4,0976	,71763	123
Empl.per.flex.Q3	3,7805	,82518	123
Empl.corp.sens.Q1	4,1220	,79533	123
Empl.corp.sens.Q2	4,0081	,88240	123
Empl.corp.sens.Q3	4,0650	,79692	123
Empl.corp.sens.Q4	4,2683	,73633	123

KMO and Bartlett's Test

Kaiser–Meyer–Olkin Measure of Sampling Adequacy.		,846
Bartlett's Test of Sphericity	Approx. Chi-Square	558,974
	df	66
	Sig.	,000

Communalities

	Initial	Extraction
Empl.occ.Q1	1,000	,563
Empl.occ.Q3	1,000	,486
Empl.anti.opti.Q1	1,000	,691
Empl.anti.opti.Q2	1,000	,784
Empl.anti.opti.Q3	1,000	,666
Empl.per.flex.Q1	1,000	,717
Empl.per.flex.Q2	1,000	,758
Empl.per.flex.Q3	1,000	,654
Empl.corp.sens.Q1	1,000	,540
Empl.corp.sens.Q2	1,000	,635
Empl.corp.sens.Q3	1,000	,628
Empl.corp.sens.Q4	1,000	,409

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4,751	39,592	39,592	4,751	39,592	39,592	2,580	21,497	21,497
2	1,556	12,965	52,556	1,556	12,965	52,556	2,564	21,367	42,863
3	1,225	10,208	62,765	1,225	10,208	62,765	2,388	19,902	62,765
4	,849	7,076	69,841						
5	,774	6,450	76,290						
6	,618	5,147	81,438						
7	,471	3,922	85,360						
8	,446	3,720	89,080						
9	,391	3,258	92,338						
10	,352	2,933	95,271						
11	,311	2,595	97,866						
12	,256	2,134	100,000						

Extraction Method: Principal Component Analysis.

Reliability – Empl.

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	123	100,0
	Excluded ^a	0	,0
	Total	123	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,856	,855	12

Rotated Component Matrix^a

	Component		
	1	2	3
Empl.anti.opti.Q2	,846		
Empl.anti.opti.Q1	,806		
Empl.anti.opti.Q3	,805		
Empl.corp.sens.Q3		,692	
Empl.corp.sens.Q2		,691	
Empl.occ.Q3		,688	
Empl.corp.sens.Q4		,560	
Empl.occ.Q1	,494	,556	
Empl.corp.sens.Q1		,556	
Empl.per.flex.Q1			,839
Empl.per.flex.Q2			,830
Empl.per.flex.Q3			,701

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

➔ **Factor Analysis – Job demands & Effort–reward fairness**

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
Job.demands.Q1	3,6016	,82720	123
Job.demands.Q2	3,4553	,91662	123
Job.demands.Q3	2,9350	,99787	123
Eff.rew.fair.Q1	2,7236	1,07353	123
Eff.rew.fair.Q2	2,0407	1,05114	123
Eff.rew.fair.Q3	2,7561	1,11135	123

KMO and Bartlett's Test

Kaiser–Meyer–Olkin Measure of Sampling Adequacy.		,737
Bartlett's Test of Sphericity	Approx. Chi-Square	324,132
	df	15
	Sig.	,000

Communalities

	Initial	Extraction
Job.demands.Q1	1,000	,775
Job.demands.Q2	1,000	,722
Job.demands.Q3	1,000	,754
Eff.rew.fair.Q1	1,000	,785
Eff.rew.fair.Q2	1,000	,810
Eff.rew.fair.Q3	1,000	,735

Extraction Method: Principal Component Analysis.

Rotated Component Matrix^a

	Component	
	1	2
Job.demands.Q1	,871	
Job.demands.Q2	,847	
Job.demands.Q3	,835	
Eff.rew.fair.Q2		,900
Eff.rew.fair.Q1		,862
Eff.rew.fair.Q3		,812

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3,025	50,416	50,416	3,025	50,416	50,416	2,293	38,211	38,211
2	1,556	25,928	76,344	1,556	25,928	76,344	2,288	38,132	76,344
3	,485	8,082	84,426						
4	,371	6,180	90,606						
5	,322	5,359	95,964						
6	,242	4,036	100,000						

Extraction Method: Principal Component Analysis.

Reliability – Job demands

Scale: ALL VARIABLES

Case Processing Summary

Cases	N		%	
	Valid	Excluded ^a	123	100,0
		0		,0
	Total	123	100,0	

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,827	,831	3

Reliability – Eff.rew. fairness

Scale: ALL VARIABLES

Case Processing Summary

Cases	N		%	
	Valid	Excluded ^a	123	100,0
		0		,0
	Total	123	100,0	

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,842	,842	3

➔ Factor Analysis – Work engagement

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
WE.vigor.Q1	3,7317	,86908	123
WE.vigor.Q2	4,0488	1,08532	123
WE.vigor.Q3	4,3333	,76466	123
WE.dedic.Q1	4,5854	,58572	123
WE.dedic.Q2	4,2764	,86176	123
WE.dedic.Q3	4,1951	1,03748	123
WE.absorp.Q1	4,2358	,75836	123
WE.absorp.Q2	4,2276	,76622	123
WE.absorp.Q3	3,9593	,94434	123

KMO and Bartlett's Test

Kaiser–Meyer–Olkin Measure of Sampling Adequacy.		,871
Bartlett's Test of Sphericity	Approx. Chi-Square	647,021
	df	36
	Sig.	,000

Communalities

	Initial	Extraction
WE.vigor.Q1	1,000	,558
WE.vigor.Q2	1,000	,510
WE.vigor.Q3	1,000	,339
WE.dedic.Q1	1,000	,569
WE.dedic.Q2	1,000	,765
WE.dedic.Q3	1,000	,514
WE.absorp.Q1	1,000	,647
WE.absorp.Q2	1,000	,633
WE.absorp.Q3	1,000	,634

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings		
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5,171	57,459	57,459	5,171	57,459	57,459
2	,894	9,935	67,394			
3	,777	8,630	76,024			
4	,637	7,082	83,106			
5	,467	5,185	88,291			
6	,414	4,604	92,895			
7	,243	2,696	95,590			
8	,218	2,420	98,010			
9	,179	1,990	100,000			

Extraction Method: Principal Component Analysis.

Reliability – WE

Scale: ALL VARIABLES

Case Processing Summary

Cases	N		%	
	Valid	Excluded ^a	Total	
	123	0	123	100,0
				,0
			123	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,900	,906	9

Component Matrix^a

	Component 1
WE.dedic.Q2	,875
WE.absorp.Q1	,805
WE.absorp.Q3	,796
WE.absorp.Q2	,796
WE.dedic.Q1	,755
WE.vigor.Q1	,747
WE.dedic.Q3	,717
WE.vigor.Q2	,714
WE.vigor.Q3	,582

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Appendix D – The linear regression output from SPSS

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2,165	,362		5,976	,000		
	Age	,005	,057	,008	,095	,924	,959	1,043
	Gender	,186	,198	,092	,938	,350	,780	1,282
	Educ.lev_R	,087	,060	,137	1,466	,145	,855	1,170
	Tech_R	,289	,184	,175	1,573	,118	,609	1,643
	Eco_R	,453	,193	,248	2,351	,020	,675	1,481
	Huma_R	,636	,263	,233	2,416	,017	,809	1,236
2	(Constant)	-,997	,621		-1,606	,111		
	Age	,016	,051	,025	,315	,753	,737	1,357
	Gender	,116	,159	,057	,730	,467	,737	1,357
	Educ.lev_R	-,022	,051	-,035	-,441	,660	,720	1,388
	Tech_R	,348	,148	,210	2,358	,020	,572	1,750
	Eco_R	,325	,155	,178	2,099	,038	,633	1,579
	Huma_R	,702	,218	,257	3,222	,002	,716	1,396
	Empl.anti.opti.tot.mean	,342	,090	,340	3,808	,000	,570	1,755
	Empl.corp.occ.tot.mean	,228	,129	,168	1,771	,079	,509	1,966
	Empl.perflex.tot.mean	,100	,102	,087	,989	,325	,584	1,712
	Orgclim.inn.flex.tot.mean	-,164	,095	-,198	-1,721	,088	,343	2,917
	Orgclim.reg.norm.tot.mean	,472	,100	,566	4,718	,000	,316	3,165
	Orgclim.cog.tot.mean	,087	,069	,097	1,267	,208	,770	1,298
	Orgclim.safety.tot.mean	-,102	,082	-,122	-1,240	,218	,470	2,126
	Job.demands.tot.mean	,254	,077	,267	3,302	,001	,695	1,440
	Eff.rew.fair.tot.mean	,061	,079	,076	,772	,442	,469	2,132
WorkE.tot.mean	-,243	,105	-,209	-2,313	,023	,558	1,792	

a. Dependent Variable: IWB.total

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			
						F Change	df1	df2	Sig. F Change
1	,361 ^a	,130	,085	,71718	,130	2,888	6	116	,012
2	,719 ^b	,517	,445	,55870	,388	8,514	10	106	,000

a. Predictors: (Constant), Huma_R, Age, Eco_R, Educ.lev_R, Gender, Tech_R

b. Predictors: (Constant), Huma_R, Age, Eco_R, Educ.lev_R, Gender, Tech_R, Orgclim.inn.flex.tot.mean, Empl.corp.occ.tot.mean, Orgclim.cog.tot.mean, Job.demands.tot.mean, Empl.anti.opti.tot.mean, Empl.perflex.tot.mean, Orgclim.safety.tot.mean, WorkE.tot.mean, Eff.rew.fair.tot.mean, Orgclim.reg.norm.tot.mean

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8,912	6	1,485	2,888	,012 ^b
	Residual	59,664	116	,514		
	Total	68,576	122			
2	Regression	35,488	16	2,218	7,106	,000 ^c
	Residual	33,088	106	,312		
	Total	68,576	122			

a. Dependent Variable: IWB.total

b. Predictors: (Constant), Huma_R, Age, Eco_R, Educ.lev_R, Gender, Tech_R

c. Predictors: (Constant), Huma_R, Age, Eco_R, Educ.lev_R, Gender, Tech_R, Orgclim.inn.flex.tot.mean, Empl.corp.occ.tot.mean, Orgclim.cog.tot.mean, Job.demands.tot.mean, Empl.anti.opti.tot.mean, Empl.perflex.tot.mean, Orgclim.safety.tot.mean, WorkE.tot.mean, Eff.rew.fair.tot.mean, Orgclim.reg.norm.tot.mean

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			
						F Change	df1	df2	Sig. F Change
1	,361 ^a	,130	,085	,71718	,130	2,888	6	116	,012
2	,468 ^b	,219	,150	,69130	,090	3,212	4	112	,015
3	,662 ^c	,438	,371	,59453	,219	14,142	3	109	,000
4	,700 ^d	,490	,424	,56891	,052	11,039	1	108	,001
5	,702 ^e	,493	,422	,56995	,003	,607	1	107	,438
6	,719 ^f	,517	,445	,55870	,024	5,350	1	106	,023

a. Predictors: (Constant), Huma_R, Age, Eco_R, Educ.lev_R, Gender, Tech_R

b. Predictors: (Constant), Huma_R, Age, Eco_R, Educ.lev_R, Gender, Tech_R, Orgclim.inn.flex.tot.mean, Orgclim.cog.tot.mean, Orgclim.safety.tot.mean, Orgclim.reg.norm.tot.mean

c. Predictors: (Constant), Huma_R, Age, Eco_R, Educ.lev_R, Gender, Tech_R, Orgclim.inn.flex.tot.mean, Orgclim.cog.tot.mean, Orgclim.safety.tot.mean, Orgclim.reg.norm.tot.mean, Empl.corp.occ.tot.mean, Empl.anti.opti.tot.mean, Empl.perflex.tot.mean

d. Predictors: (Constant), Huma_R, Age, Eco_R, Educ.lev_R, Gender, Tech_R, Orgclim.inn.flex.tot.mean, Orgclim.cog.tot.mean, Orgclim.safety.tot.mean, Orgclim.reg.norm.tot.mean, Empl.corp.occ.tot.mean, Empl.anti.opti.tot.mean, Empl.perflex.tot.mean, Job.demands.tot.mean

e. Predictors: (Constant), Huma_R, Age, Eco_R, Educ.lev_R, Gender, Tech_R, Orgclim.inn.flex.tot.mean, Orgclim.cog.tot.mean, Orgclim.safety.tot.mean, Orgclim.reg.norm.tot.mean, Empl.corp.occ.tot.mean, Empl.anti.opti.tot.mean, Empl.perflex.tot.mean, Job.demands.tot.mean, Eff.rew.fair.tot.mean

f. Predictors: (Constant), Huma_R, Age, Eco_R, Educ.lev_R, Gender, Tech_R, Orgclim.inn.flex.tot.mean, Orgclim.cog.tot.mean, Orgclim.safety.tot.mean, Orgclim.reg.norm.tot.mean, Empl.corp.occ.tot.mean, Empl.anti.opti.tot.mean, Empl.perflex.tot.mean, Job.demands.tot.mean, Eff.rew.fair.tot.mean, WorkE.tot.mean

Appendix E – Correlation matrix output from SPSS

		Correlations																	
		Age	Gender	Educ lev. R	Tech. R	Eco. R	Hum. R	Orginim. flex. tot. mean	Orginim. cog. norm. tot. mean	Orginim. cog. tot. mean	Orginim. safety. tot. mean	Empl. anti. opt. tot. mean	Empl. corp. occ. tot. mean	Empl. perf. tot. mean	Empl. demands. tot. mean	Eff. new/ fair. tot. mean	WorkE. tot. mean	WB. total	
Age		1																	
	Pearson Correlation	.139																	
	Sig. (2-tailed)	.126																	
Gender			1																
	Pearson Correlation	.139																	
	Sig. (2-tailed)	.126																	
Educ lev. R				1															
	Pearson Correlation	.362	.116																
	Sig. (2-tailed)	.109	.406**																
Tech. R					1														
	Pearson Correlation	.232	.000	.497															
	Sig. (2-tailed)	.123	.982	.000															
Eco. R						1													
	Pearson Correlation	.012	-.365**	.247**	.468**														
	Sig. (2-tailed)	.123	.000	.006	.000														
Hum. R							1												
	Pearson Correlation	-.029	-.111	.236**	-.340**	.065													
	Sig. (2-tailed)	.123	.123	.123	.123	.123													
Orginim. flex. tot. mean								1											
	Pearson Correlation	.581	.297	.658	.966	.834	.985												
	Sig. (2-tailed)	.123	.123	.123	.123	.123	.123												
Orginim. cog. norm. tot. mean									1										
	Pearson Correlation	-.045	-.109	.156	-.077	.081	.037	.766**											
	Sig. (2-tailed)	.123	.123	.123	.123	.123	.123	.123											
Orginim. cog. tot. mean										1									
	Pearson Correlation	-.135	-.058	-.009	.125	-.005	-.115	.355**	.296**										
	Sig. (2-tailed)	.137	.524	.921	.167	.957	.205	.000	.000										
Orginim. safety. tot. mean											1								
	Pearson Correlation	-.103	-.126	.126	.016	-.044	-.087	.565**	.602**	.336**									
	Sig. (2-tailed)	.258	.165	.164	.861	.659	.341	.000	.000	.000									
Empl. anti. opt. tot. mean												1							
	Pearson Correlation	-.146	-.063	.291**	-.049	.091	.162	.032	.028	.087	-.014								
	Sig. (2-tailed)	.108	.492	.001	.589	.315	.073	.758	.338	.881	.000								
Empl. corp. occ. tot. mean													1						
	Pearson Correlation	.139	-.045	.151	.010	.081	.053	.047	.124	.079	.087	.460**							
	Sig. (2-tailed)	.126	.618	.095	.911	.376	.559	.607	.170	.384	.337	.000							
Empl. perf. tot. mean														1					
	Pearson Correlation	-.096	-.130	.059	-.061	-.042	.118	.211**	.196**	.226**	.125	.376**	.526**						
	Sig. (2-tailed)	.123	.123	.123	.123	.123	.123	.123	.123	.123	.123	.123	.123						
Job demands. tot. mean															1				
	Pearson Correlation	.095	.483	.256	.914	.298	.072	.034	.008	.193	.274	.159	.382	.382					
	Sig. (2-tailed)	.123	.123	.123	.123	.123	.123	.123	.123	.123	.123	.123	.123	.123					
Eff. new/ fair. tot. mean																1			
	Pearson Correlation	.242**	.129	-.195*	-.005	.039	-.119	-.540**	-.537**	-.250**	-.584**	-.020	.096	-.036	.335**				
	Sig. (2-tailed)	.007	.156	.031	.956	.670	.191	.000	.000	.005	.000	.823	.289	.691	.000				
WorkE. tot. mean																	1		
	Pearson Correlation	.172	-.081	.113	.012	.005	.062	.431**	.425**	.221**	.320**	.382**	.315**	.356**	.356**				
	Sig. (2-tailed)	.123	.123	.123	.123	.123	.123	.123	.123	.123	.123	.123	.123	.123	.123				
WB. total																		1	
	Pearson Correlation	.025	.028	.229*	.009	.182*	.211*	.050	.218*	.109	-.018	.453**	.482**	.322**	.269**	.063	.151		
	Sig. (2-tailed)	.784	.758	.011	.918	.045	.019	.582	.015	.231	.840	.000	.000	.000	.003	.492	.095		

** . Correlation is significant at the 0.01 level (2-tailed).
* . Correlation is significant at the 0.05 level (2-tailed).