Høgskulen på Vestlandet

MSB210 Masteroppgave

MSB210-O-2022-VÅR-FLOWassign

Predefinert informasjon

Startdato:	06-05-2022 12:00	**Termin:**	2022 VÅR
Sluttdato:	20-05-2022 14:00	**Vurderingsform:**	Norsk 6-trinns skala (A-F)
Eksamensform:	Masteoppgave		
Flowkode:	203 MSB210 1 O 2022 VÅR		
Intern sensor:	(Anonymisert)		

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Høgskulen på Vestlandet

MASTEROPPGAVE

Ansattes innovasjonsatferd: Konteksten til norske teknologibedrifter

Employee innovation behavior: The context of Norwegian technology firms

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20.05.2022

Jeg bekrefter at arbeidet er selvstendig utarbeidet, og at referanser/kildehenvisninger til alle kilder som er brukt i arbeidet er oppgitt, *jf. Forskrift om studium og eksamen ved Høgskulen på Vestlandet, § 12-1.*

Sammendrag

Denne studien undersøker hvordan innovative bedrifter i et relativt nytt marked for smart strømstyring og elbil-lading bruker sine ansatte som kilder for innovasjon, hvilke faktorer som legger til rette for medarbeiderdrevet innovasjon og hvordan øko-innovasjon påvirker de ansattes insentiv til å bidra. Gjennom en multippel case studie tilnærming ble data samlet inn gjennom semi strukturerte intervjuer med informanter fra fire organisasjoner på Vestlandet som er opptatt av strømstyring og elbil-lading, med ett høyt fokus på bærekraft og øko-innovasjon. Denne studien viser at organisasjonene ser på sine ansatte som verdifulle innovasjonskilder og hvordan de ansatte kan bidra og bli med i innovasjonsprosessen. Videre viser studien at organisasjonen alle utnytter fem faktorer som er knyttet til medarbeiderdrevet innovasjon, nemlig innovativ kultur, kommunikasjonsåpenhet, opplevd feil toleranse, autonomi og opplevd belønnings rettferdighet. Studien utforsker også hvordan øko-innovasjon kan påvirke de ansattes insentiver og motivasjon til å bli med i innovasjonsarbeidet, og indikerer at et sterkt fokus på øko-innovasjon og ansatte med grønne identiteter kan bidra til å skape en grønn kultur som motiverer de ansatte til å bidra til øko-innovasjon. Til slutt gir denne studien anbefalinger for organisasjoner som ønsker å øke sine ansattes innovative atferd og engasjement, basert på funnene.

Nøkkelord: *Innovasjon, medarbeiderdreven innovasjon, innovasjonskilder, øko-innovasjon*

Abstract

This study examines how innovative companies in a relative new market for smart electricity control and electrical vehicle charging use their employees as sources for innovation, what factors facilitate for employee driven innovation and how eco-innovation affect the employee's incentive to contribute. Through a multiple case study approach data is collected through semi structured interviews with informants from four organizations in western Norway concerned with electricity control and electrical vehicle charging, with a high focus on sustainability and eco-innovation. This study shows that the organizations do view their employees as valuable innovation sources, and how the employees can contribute and join the innovation process. Furthermore, the study finds that the organization all utilize five factors which is linked to employee driven innovation, namely innovative culture, communication openness, perceived failure tolerance, autonomy and perceived reward fairness. The study also explore how eco-innovation can affect the employee's incentives and motivation to join the innovation work and indicates that a strong focus on eco-innovation and employees with green identities can help create a green culture that motivates the employees to contribute to eco-innovation. Lastly, this study gives recommendations for organizations who want to increase their employee's innovative behavior and engagement, based on the findings.

Keywords: *innovation, employee driven innovation, innovation sources, fostering employee driven innovation, eco-innovation*

Acknowledgements

This master thesis marks the end of a two year long master's degree in economy and administration at Høyskolen på Vestlandet campus Haugesund. We have learned a lot these past two year and are left with a lot of theoretical knowledge, practical experience, and some valuable experiences and memories.

Upon the completion of this thesis, there are a lot of people whose roles deserve to be recognized. Firstly, we would like to thank our supervisor Maryna Zhuravlyova Solesvik for her guidance, input and help in the forming of this thesis. We would also like to thank all of the informants for giving their time and sharing with us.

We would also extend our gratitude to our friends and family for supporting us along the way. Lastly, we want to thank each other for a very well collaboration throughout the semester.

Anne Grete Lilleland

Willy Olav Eike

Haugesund, May, 2022

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1. Introduction

1.1 Background

For years now Norwegian businesses have been experiencing an increasing pressure to become more sustainable and environmentally friendly. Firms, as well as societies, needs innovation to achieve a high level of economic welfare (Kesting & Ulhøi, 2010). Innovation and development of technology and technological systems are important factors for the green shift, and this is how green innovations emerge. To keep up with the new challenges and opportunities firms can turn to different sources for innovation, one of which are their own employees. Driven by their ideas, competence, problem solving abilities and creativity, employees are an innovation source that can contribute to many different innovation practices (Høyrup, 2010, p. 149).

In these changing times where innovation is needed, we decided to look closer into how organizations can and do include their employees in their innovative work. The motivation for our study was to get a view into a market that is considered new, technologically challenging, highly innovative, and competitive. This study attempts to get an understanding of how and if these highly innovative and sustainability focused organizations engage their employees in their innovation work. The findings are based on four different organizations who work on smart control of electricity and electrical vehicle charging. At the end of 2021, the number of electric cars in Norway grew by 36% and accounted for 16% of the passenger car fleet, where 2 out of 3 new personal cars are electric (Bråthen, 2022). This has led to a high demand for charging solutions and smart electricity control. Following an increased attention to electricity due to a period of high electricity prices, these organizations have been under pressure to innovate. This is a newer market filled with innovation and opportunities, and employees willing to contribute. Furthermore, this is an industry with a high focus on the green shift and sustainability.

1.2 Theme and research question

The theme for this study is employee driven innovation and eco-innovation. The thesis tries to explore how employees' innovative activities are related to factors in the organizations. Furthermore, the study investigates how the employees' own sustainability awareness and concern affects their innovative activity, and the effect eco-innovation has on the employees incentive to contribute. These are the following research questions underlying this thesis;

1. Do the organizations consider their employees to be a valuable source of innovation?

2. What factors do the organizations use, and do these factors yield results in the form of employees contributing to the innovation work?

3. How does eco-innovation affect the intention and motivation of employees to participate in employee driven innovation activities?

The first research question seeks to uncover if the case organizations consider their employees as valuable innovation sources. The second research question is linked to the factors outlined in the conceptual framework in chapter 2. These factors are innovative culture, communication openness, perceived failure tolerance, autonomy and perceived reward fairness. The aim of this research question is to examine to which degree these factors are used, which of them are used, and based on this, how much or little incentive to innovate the organization receives from their employees. The idea is that there will be a pattern between these factors and the degree in which the employees participate in innovation. The aim of the third research question is to investigate if employees are more prone to participate in innovation when it pertains to sustainability and environmentally friendly innovations. Eco-innovation is an umbrella-term that frames all socio-technical change towards environmental sustainability, and shelters many meanings (Colombo et al., 2019, p. 3). This research question is inspired by the findings of Rohrbeck & Linneberg (2019) study and Buhl et al. (2016) who requested research that investigates whether a personal sustainability orientation of employees also leads to a more resourceful innovation behavior.

1.3 Contributions

To answer these research questions a multiple case study of four innovative organizations were completed. Qualitative data was collected through the use of semi-structured interviews, which were then analyzed to answer all the research questions. This master thesis is a contribution to previous theory and practicality on employee driven innovation, and also how employee driven innovation can effect eco-innovation and vice versa. Previous theories are proven right, and all the factors indicate a positive effect on employee's innovative activities. Furthermore, increased eco-innovation is found to be a driver for employee eco-innovation. Recommendations are also given in regards to how organizations can facilitate employee driven innovation to better include their employees.

1.4 Disposition of the study

The study consists of 7 chapters. In chapter 2 the theoretical framework is presented. The purpose of this chapter is to create a solid knowledge base and a theoretical foundation. The theoretical framework and research questions will be presented at the end of this chapter, which will be the starting point for the study's discussion and analysis. In chapter 3 the study's method and research choices is presented, as well as reflections on the quality of the data material and ethical considerations. Chapter 4 presents the empirical findings from collected data which will be used to answer the research questions. These empirical findings are then analyzed and discussed against previous theory and the theoretical framework in chapter 5. Chapter 6 is the last chapter where conclusions are drawn to answer the research questions. The study's most important contributions, limitations and proposals for further research are also presented in this chapter.

2 Literature

In this chapter the focus will be on the literature review and the conceptual framework of the study. It starts with a general description about what innovation is and the different sources of innovation. This will segway into a deeper understanding of what employee driven innovation is, followed by theories on employee driven innovation pertaining to this thesis. The concept of eco innovation will be described, and how this can affect the motivation and intention of employees to participate in the innovation process. The conceptual framework will then be constructed together with the research questions this study aims to answer.

2.1 What is innovation?

2.1.1 Innovation defined

Innovation is often associated with positivity, growth, new possibilities, and something to strive for. Businesses want to be associated with innovation and perceived as innovative. They include it in their mission and vision statements, while many might not even be aware of what innovation actually means. When people hear innovation they often think of something new or a new invention. This does not have to be the case. Innovation has been defined in many ways. Joseph Alois Schumpeter is by many referred to as the father of innovation. He established the theory that constant innovation causes economic fluctuations, and he defined innovation in 1912 as "*a new combination of production means, resources, labor, and others, in a way that is different from the past in economic activities"* (Nakamori, 2020, p. 2). Nonaka (1994, p. 14) argued that innovation could more easily be understood as a process, where the members of the organization create and define problems and then actively develop new knowledge to solve these problems.

A more recent and commonly used definition is the two folded one that defines innovation as *"(1) the introduction of something new, or (2) a new idea, method, or*

device" (Kahn, 2018). These two definitions represent two important distinctions in innovation. In the first definition innovation is presented as an outcome, while in the second definition innovation is presented as a process. Hence, innovation is both an outcome and a process. Outcome emphasizes output, which is typically associated with a new product or service, also known as product innovation. However, innovation as an outcome includes; product innovation, process innovation, marketing innovation, business model innovation, supply chain innovation, and organizational innovation. These are the different types of outcome associated with innovation, while innovation as a process attends to the way innovation is and how it should be organized so that these outcomes can come to fruition (Kahn, 2018). Kahn (2018) also emphasized mindset as an important third part, together with outcome and process. He argued that innovation as a mindset, in turn, also would lead to more innovation. This will be discussed further later on in this chapter.

2.1.2 The different types of innovation

Organizations can be innovative in many ways, and there are different types of innovations they can implement. Schumpeter listed five different innovation types; product innovation, process innovation, market innovation, supply chain innovation and organization innovation (Nakamori, 2020, p.3). Product innovation involves new products or services, or a significant improvement to the product or service with respect to its characteristics or its intended use (Demircioglu et al, 2019). This can vary from cost reduction, product improvements, line extensions, new markets, new uses, new category entries, and too "new to the world" products (Kahn, 2018). Process innovation involves the introduction of a new production method or delivery method. This can be changes in the production to increase efficiency and lower costs. Market innovation, more known as marketing innovation, pertains to the development of new sales channels, the connection with consumers on new and different levels and new types of promotional efforts. Peter F Drucker, who made significant contributions to the innovation theory regarding marketing and management is well known for his statement in 1973 "*There is only one valid definition of business purpose: to create a customer. Business has only two functions: marketing and innovation*" (Nakamori, 2020). Supply chain innovation involves a change in the supply chain network, the supply chain technology and/or processes. It could for example involve a new source for raw material

or rare metals. Organizational innovation is changes to the organization, such as changes in the organizational structure, new forms of management or work environments. Another type of innovation that gets a lot of attention, not mentioned by Schumpeter, is business model innovation. Foss & Saebi (2016) define business model innovation as "*designed, novel, nontrivial changes to the key elements of a firm's business model and/or the architecture linking these elements.*".

2.1.3 The different forms of innovation

All innovations have their purpose in the market. There are different ways of development in the different industries, and to gain a competitive advantage firms must know what the perfect fit for their business model is (Christensen, 2001, p.106). Are they a big firm who just wants to satisfy their stakeholders and upgrade their usual product? Maybe they are a smaller firm that wants to create their own blue ocean. Perhaps they want to change the world as we know it. Different innovations make different impacts on the world. There are different forms of innovation, this study will look closer into Architectural innovation, Disruptive innovation, Incremental innovation and Radical innovation (Narayanan & O'Connor, 2010, p. 89-95). Architectural innovation is a form of innovation on existing products, making them different. Product development is often associated with this innovation form, because in architectural innovation already existing components from the market are used to make a better version of an already existing product (Henderson & Clark, 1990, S.10). Examples of this can be Samsung making a cheaper computer screen with already existing products, to sell to customers at the lower-end who might be willing to trade quality for cost.

A common misconception when it comes to innovation is often that it has to be something totally new and radical in nature. This is not always the case. Innovation can be categorized based on its novelty, and embrace all kinds of innovation, from small incremental innovations to radical "game changer" innovations. Incremental innovation refers to smaller adjustments or modifications, while radical innovation refers to a fundamental or profound change (Høyrup, 2010, p. 145). A key difference between the two, is that incremental innovations are continuous changes based on improvement of existing technology, while radical innovation is a discontinuous change, in which the

new technology is drastically different from the existing technology (Nakamori, 2020, p. 6). Incremental innovation forms apply to a number of big firms in the market, an example of a company that do a lot of incremental innovation is Gillette. Gillette is a company that makes products for shaving, including razors and cream. The changes they make to their product are often incremental upgrades. This could be as little as a less irritating shaving cream, or sharper blades on the razors. This innovation method is a problem driven innovation to gain competitive advantage in the market (Coccia, 2017, p. 1050).

Many scholars have different definitions of radical innovation, but they agree that it is a type of innovation that often differs from the normal product line a firm has, and then completely changes the market as we know it (McDermott & O'Connor, 1990, p. 425) Examples of this kind of innovation could be how the locomotives went from steam to electrical diesel (McDermott & O'Connor, 1990, p. 425). A more modern radical innovation is the smart phones, and how they changed nearly every industry with the digitalization that came with it. Clothes went from physical stores to shopping online, marketing went from posters to online marketing campaigns.

Disruptive innovation is an innovation that radically changes the market completely, where there is a high probability that existing leading companies will not survive (Nakamori, 2020, p. 7). Christensen, known for his book "The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail", argued that disruptive innovation is not the same as radical innovation, as it is possible for rational managers to respond appropriately to radical innovation (Nakamori, 2020, p. 7). Historically, bigger firms, like Nokia and Kodak, have been negatively affected by disruptive innovation as they did not foresee the new possibilities, and were not able to keep up with the competition. Customers are often focused on getting better versions of already existing products, this pressures the companies to R&D for solutions for an already existing product, instead of exploring new possibilities. Even though Christensen said that disruption is a process, not an event, and innovations can only be disruptive relative to something else (Denning, 2016, p.11). To give context to Christensen's claim that disruption is a process and not an event, we could use Apple as an example of a firm that is extremely disruptive in the market. Steve Jobs and Apple launched the new internet communication device, iPod, telephone and Mcintosh all combined, which we know today as the iPhone. All of these products were already developed and out on the

market. Apple restructured the architectural design and technology from all these products and combined and redesigned them as something brand new which disrupted/changed the tech and phone market completely.

2.2 The different sources of innovation

Organizations can turn to a lot of different sources for innovation. When we hear about innovative organizations that have launched a new product or process, one is quick to assume that there has been a R&D function involved. Innovation engagement has primarily focused on Research and Development (R&D) based innovation, and user- and technology-driven innovation (Høyrup, 2010, p.146). There are, however, many other sources for innovation organizations can turn to. Being able to recognize, acknowledge and exploit different knowledge sources is important for organizations as it can be harnessed to enhance the organization's innovation activities (Demirciogul et al., 2019). Whether they are exploited or not, depends on the organization. Failing to take advantage of these sources could lead to missed opportunities.

In a study of sources of innovation and innovation type, suppliers, customers, other people in the industry, workers and university were pointed as important innovation sources (Demirciogul et al.,2019). Universities, customers and workers were found to be crucial knowledge sources, and positively associated with product innovation, process innovation, marketing innovation and overall innovative activity. Acknowledging these knowledge sources is essential for those who want to get ahead. These sources differ from the R&D functions and from the managers, and they may inherit knowledge and have a different focus. This can allow for new ideas, new pathways and innovation, if they are recognized. Customers as sources of innovation can take a lot of different forms. They can be included in the innovative process through panels, questionnaires, online communities, or through their feedback and ideas. Different types of customers can also be used, like extreme users, and they can be included in different stages of the innovation process, from bringing the idea to the organization to feedback and testing of the final result. Universities are known knowledge centers. Through their knowledge output (students and professors papers) organizations can gain open knowledge. To further utilize the universities the organizations can collaborate with the universities in different ways, like joining case

studies, taking in student apprentices, funding papers etc. There is often also an abundance of students with entrepreneurial spirits with ideas ready to share and put to life.

2.3 Employee driven innovation

2.3.1 What is employee driven innovation

Employees can be a huge source of innovations for organizations, as mentioned above. They know the organization, how the organization operates, the products and its processes. Exploiting the knowledge and ideas of these employees, regardless of position, can lead to innovation, from incremental to more radical (Tidd & Bessant, 2018, p.115; Høyrup, 2010). The research on employee driven innovation is based on the assumption that every employee, regardless of organizational level, have the potential for creative thinking, and are therefore able to contribute to innovation and change (Amundsen et al., 2014, p. 26). The focus in EDI is on innovative practices, contributions outside the boundary of the employee's primary job responsibilities, by any employee at all levels of the organization, driven by the employees resources (Høyrup, 2010,p.149). Their resources refer to their ideas, competencies, creativity and problem-solving abilities.

2.3.2 The participants in employee driven innovation

To gain a fuller understanding of employee driven innovation it is inherent to conclude who the employees actually are. Basically, everyone working in an organization can be referred to as an employee. However, this view won't be sufficient in the understanding of employee driven innovation, considering the former explanation of employee driven innovation. There will be a lot of employees working with innovation and strategies in an organization, but when this is part of their primary job responsibility, they are not engaging in employee driven innovation. Kesting & Ulhøi (2010) makes a distinction between those they label as employees and those they label as managers, in regards to employee driven innovation. Simply put, a manager is someone who has the authority to make decisions at the strategic level; they are assigned formal authority to make decisions about innovations (Kesting & Ulhøi,2010). The employees on the other hand,

do not possess this authority, and have no legitimate right to make strategic decisions that will affect the future development of the organization. These are the individuals we refer to in regard to employee driven innovation.

2.3.3 How employees can participate in employee driven innovation

Høyrup (2010, p.48) identifies two different governments in which employees can formulate and develop ideas to improve the organization; through button-up self-initiated activities or through top-down initiatives, where management invites the employees to suggest or develop innovative ideas. The bottom-up way is the most common and most research approach, as many companies might not have top-down initiatives and a lot of research on employee driven innovation focus on what factors makes an employee engage in innovation activities voluntarily. Bottom-up initiated innovation is also positively associated with employee job satisfaction (Demircioglu, 2020). The employees can contribute to many different innovation practices, driven by their ideas, competence, problem solving abilities and creativity, in teams or on their own, in all types of innovation, and at any level of intensity (Høyrup, 2010, p. 149). They can contribute in product, process, organizational or market innovation, and it can range from incremental to radical. Tidd & Bessant (2018, p.115) state that everyone in an organization possess the abilities underlying innovativeness, and even if they may only be able to develop limited incremental innovations, these efforts can sum up to have far-fetching impacts. Hence, employee driven innovation can include radical innovation in the long-term perspective. Employee driven innovation can arise spontaneous and informal, or it can be organized and supported through managerial and organizational means. However, regardless of how it occurs, it needs to be recognized, supported and organized, and it can lead to great opportunities for the organization and economic gain (Høyrup, 2010, p. 149).

2.4 Factors affecting employee driven innovation

2.4.1 Aspects of the culture that can foster employee driven innovation

Research on employee driven innovation has found that an organization's culture can aid in fostering employee driven innovation (Amundsen et al., 2014). In a study of 20 Norwegian enterprises with a focus on open innovation and employee driven innovation, it was found that the organizations that experienced an increase in innovative capability by exploiting employee driven practices all had a number of cultural characteristics in common (Amundsen et al., 2014, p. 28). These characteristics were "commitment", "Cooperative orientation", "Pride", "Trust", "Tolerance", "Feeling of security", "Development orientation", "Openness", and "Autonomy". A quantitative study of four factors enhancing employees innovative behavior were conducted on managerial level employees in the telecommunication sector in Pakistan. This study examined the effect of failure tolerance, communication openness, work discretion and reward fairness, while moderating for organizational tenure (Haq et al., 2017). It was found that all these factors had a positive effect on the employees innovative behavior, while the tenure of the employees moderated this effect. The longer the employees had been with the organization, the less the factors affected them.

Based on the given explanation in Amundsen et al. (2014) these characteristics can further be categorized and grouped together, and synthesized with the findings of Haq et al. (2017). Hence, the culture in the organization, the level of communication openness, the perceived reward fairness, the failure tolerance and autonomy are claimed to have an effect on employees motivation to contribute in innovative work. Each of these characteristics will be further analyzed in this sub chapter.

2.4.2 The innovative culture

Innovation as a mindset was introduced earlier in the chapter and pertains to the internalization of innovation by the members of the organization and the promotion of a supportive culture through the organization (Kahn, 2018). By implementing, instilling

and ingraining innovation on both individually and organizational levels, innovation has propensity to flourish, and favorable innovation characteristics can emerge. Organizational culture pertains to the culture that's been made and asserted in the organization, and contains assumptions, values and norms that are shared by the members of the organization (Jacobsen & Thorsvik, 2013, p.130). The commitment and development orientation characteristics are based on the perception of innovation and development as part of the job in an organization. This could be combined with Kahn´s view of the innovative mindset, where, if successfully implemented, innovation is a part of the employee's mindset and hence their job. The existence of a hidden work requirement that pushes and encourages the employees to look for ways and possibilities to further the development of the organization and bettering it.

Castro et al. (2013) considers an innovative culture to be a key organizational capability that helps the organization perform better, and argues that it is therefore important to focus on developing a good environment in organizations that promotes risk, innovative capabilities and personal motivation to create new knowledge. Innovation culture is referred to as the shared common values, beliefs and assumptions of organizational members which accelerate the innovation process (Castro et al., 2013). When an organizational culture encourages the employees innovation capacity, tolerates risk, and supports personal growth and development, the organizational culture can be labelled as an innovation culture. However, the impact of an innovative culture may vary depending on the organizational structure. Iranmanesh et al.(2020) found that the innovative culture did not have the same effect on a centralized system, and that in a formalized structure, the written rules and procedures play the guiding role for the employees and consequently, the innovative culture has a reduced role in directing employees towards innovation. Hence, there could be an innovative culture in the organization, but if the organization is highly centralized with a formal structure, this hampers the effect of the innovative culture on the employee's innovative behavior.

2.4.3 Communication openness

Openness in communication was found to have a positive effect on employee innovativeness in both Amundsen et al. (2014) and Haq et al. (2017) Free exchange of ideas, knowledge and perspectives stimulates to innovation between the members in

organizations (Amundsen et al., 2014; Haq et al., 2017). Ideas are formed in the minds of individuals, but interactions between individuals often play a critical role in the development of these ideas (Nonaka, 1994, p. 16).

When employees communicate openly about their ideas, their perspective, share information and knowledge, creativity and learning can thrive. Information and knowledge is often used synonymously, however, there is a difference between them. Information is seen as a flow of messages, while knowledge is more complex. Nonaka (1994, p. 16) regards information as a necessary medium for the initiation and the formalization of knowledge. Hence, information is necessary to obtain knowledge. Knowledge can be defined in three parts. Firstly, it is a justified true belief, secondly, it is a skill in which people can inherit (Nonaka & Krogh, 2009). Knowledge lets people define, shape, prepare and learn how to solve a problem or task. Third, this knowledge is explicit or tacit along a continuum (Nonaka & Krogh, 2009).

As mentioned earlier, employees were found to be crucial knowledge sources (Demircioglu et al, 2019). They inherit both what is known as tacit knowledge and explicit knowledge. Explicit knowledge is knowledge that can be uttered in sentences, captured in drawings and in writing (Nonaka & Krogh, 2009, p 635). Tacit knowledge, on the other hand, is rooted in procedures, actions, routines, commitment, values, ideas and emotions. This knowledge is tied to our tactile experiences, the senses, intuition, movement skills, unarticulated mental models or implicit rules of thumb (Nonaka & Krogh, 2009, p. 635). Hence, this is knowledge that is more difficult to understand, absorb and to transfer, and will require better communication to transfer appose to explicit knowledge that is more easily shared. The innovative behavior of employees have been found to be positively impacted by knowledge sharing (Ye et al., 2021; Yuan et al., 2018; Novitasari et al., 2021). Novitasari et al. (2021) emphasizes the importance of sharing knowledge as the antecedent of innovative behavior. The sharing of knowledge can also stimulate learning in the organization. Fenwick (2003, p. 123) argues that innovation is a complex and significant dimension of learning in the work place. Learning in the work place can be defined as the process, or processes, by which individuals expand their capacities, their knowledge, skills, compacities and similar, through experience, actions and social interaction (Høyrup, 2010). Fenwick (2003) states that innovation is an important form of everyday practice-based learning, so in this view the process of innovation is conceptualized as processes of learning.

As this study is conducted in Norway, it seems consequential to mention/look at cultural differences. In this sense, the idea of the Scandinavian management style. The management style in the Scandinavian countries have become a concept of its own. These management styles have been found to differ from non-Scandinavian countries, while not differing between the Scandinavian countries (Grenness, 2003). The Scandinavian management style is not a set style that every manager in Scandinavia follow, but a phenomenon used to describe the mutual characteristics of managers in Scandinavian countries. These managers usually value cooperation, power sharing and participation (Grenness, 2003). A lot of emphasis is put on cooperation between the managers and the employees, and a strive for consensus. This characteristic can be said to be underpinned due to the lack of competition in the school system (Grenness, 2003), which again is a cultural characteristic for the Scandinavian countries. The lack of focus on competition in the school system and in the work place, combined with the focus on cooperation, can open for communication. When the employees don't feel like they're in an competitive environment, sharing information might be easier, and won't feel the need to keep vital information for themselves, as they are cooperating rather than competing.

Many organizations implement the notion of "open door policy", which for most organizations is an open and informal invitation for employees to air their grievances with their managers (McCabe & Rabil, 2002, p. 39). The intent behind the policy is to make employees feel free to seek out managers if they feel the need. This is an attempt to make it less frightening for the employees to go to the managers and improve communication between managers and employees. The extent of these open door policies can vary. Some organizations invites their employees to seek managers for all types of problems, both personal and business related, while others might be more closed off, encouraging the employees to seek out HR before going to the managers (McCabe & Rabil, 2002, p. 39).

2.4.4 Perceived failure tolerance

When trying out a new method or idea, there is always a chance of failure, which can be frightening. This is also the case for employees who want to or consider contributing to the innovation work. Their ideas might not be good, be canned, or they might be tried out only to fail. This can be quite intimidating. Failure is defined by Cannon & Edmondson (2005) as a deviation from the expected and desired outcomes. This includes large and small failures, and the different domains, from personal to technical failures. A high tolerance for failure in an organization has shown to have a positive effect on innovation (Haq et al., 2017; Cannon & Edmondson, 2005; Tian & Wang, 2014). This tolerance of failure can also be connected to Amundsen et al.(2014)´s characteristics "feeling of security" and "tolerance". Feeling secure in one's position, even if they propose something that's not good, or something the managers don't like. Being tolerated and feeling secure, even if one attempts something that fails. An environment where failure is accepted takes away some of the fears associated with failure. Being able to freely express themselves in regard to new ideas, proposals or attempts without being met with negativity or the risk of losing their jobs have a positive effect on EDI (Amundsen et al., 2014, p. 29).

Cannon & Edmondson (2005) encourage managers to redefine failure from something discreditable, too a critical first step in the journey of discovering and learning. They claim that these deviations from the preferred outcomes can, based on how they are handled, lead to new possibilities and learning. Like from the expression "learn from your mistakes". Consequently, it might not be just as straight forward. Marzocci & Ramlogan (2019) argues that failure only has an effect on specific innovation strategies, and that failure can either reinforce existing behavior or reverse them. If failure is already factored in in the firm's innovative strategy, the failed projects are unlikely to significantly affect the innovative behavior (Marzocci & Ramlogan, 2019). Hence, factoring in failure as something that most likely will occur, or something acceptable, the "blow" from a failure is less damaging on the motivation and further innovation work. Therefore, accepting and tolerating failure, will have a less damaging effect on the innovative behavior in the organization.

2.4.5 Autonomy

Studying which two leadership styles that best promoted employee driven innovation, Echebiri & Amundsen (2019) found that the leadership style that promoted autonomy and discretion for the employees stimulated employee driven innovation. Giving the employees freedom in execution and ability to make their own decisions had a positive effect on employee driven innovation, which underlines the findings of Amundsen et al. (2014) and Haq et al. (2017). Autonomy can be defined as "the quality or state of being self-governing" (Merriam Webster), while work discretion pertains to the level of freedom an employee is provided regarding organizing, planning and in the execution of their work. A higher degree of autonomy can promote the generation of ideas, discovery and the realization of new possibilities (Foss et al., 2014). The more freedom employees have in performing and executing their work, the more innovative they can be. Freedom makes way for creativity, which in turn can lead to innovation. With autonomy employees receive more ownership of their work and the problems they have to face. Demircioglu (2020) found that ideas emanating from employee workgroups are positively associated with autonomy. Autonomy was also found to mediate the relationship between CSR initiatives and employee innovative behavior, where a higher degree of autonomy led to more innovative behavior (Li et al., 2021).

In a study about the link between individual-level factors and employee driven innovation in the Norwegian banking sector it was found that the need for autonomy had no direct positive association with employee driven innovation (Echebiri, 2020, p. 49). It did however, have an indirect association with employee driven innovation as it had a positive relationship with self-leadership, which in turn had a positive effect on employee driven innovation. Autonomy did not have a direct effect in and of itself, but rather an indirect effect which in turn positively affected employee driven innovation. From this, one could argue that there might be other factors that are affecting employee driven innovation directly, while the cultural characteristics might be an indirect effect on these. In the study of open innovation and employee driven innovation, the common cultural characteristics were interrelated, which implied that changes in one of them would most likely affect one or more of the others (Amundsen et al., 2014, p.28).

2.4.6 Perceived reward fairness

Having a reward system in place has been found to positively affect employees performance and innovative behavior (Hasanudin et al., 2018, p.238). Rewards can be used to align the employees goals with the goals of the company. Imposing creativity-contingent reward systems can be used in an effort to boost employee creativity and motivation. It signals to the employees that innovation and creativity is valued in the organization, and can affect both the employees intrinsic and extrinsic motivation. These rewards can come in different forms. Haq et al (2017, p. 818) point to three different forms of rewards; intrinsic rewards, extrinsic rewards and social rewards. Extrinsic rewards are tangible benefits, like pay, benefits and career development opportunities (Newman & Sheikh, 2011). Intrinsic rewards are rewards that come from the content of the job in itself. It encompasses the motivational characteristics of the job, such as training, autonomy and role clarity (Newman & Sheikh, 2011). The social rewards arise from the interaction with other people in the organization, and can include supportive relationships with coworkers and managers.

In a study on rewards on intrinsic motivation and creativity, high reward evaluation fairness of creativity-contingent rewards was found to be significant regarding increased intrinsic motivation and creativity (Saether, 2020, p. 6). Subsequently, no rewards or low reward evaluation fairness did not have the same effect on intrinsic motivation and creativity. Having a reward system might therefore not be enough. Haq et al. (2017) ´s result align with this and shows that an awards system is not enough unless the rewards were distributed fairly. The perception of fairness of the reward system is hence important. If the employees feel that the rewards system is unfair, it won't have the same effect anymore, the value lies in the fairness of the distribution. An unfair system could lead to some receiving rewards while not being deserving, while others who might be deserving don't receive any. The size or impact of the rewards can also be the problem, if some are rewarded more than others, for the same results, it is an unfair system.

2.5 Eco-innovation

Eco-innovation is innovation aimed at improving a firm's environmental performance (Colombelli et al., 2019). It is defined as innovation which benefits the environment and contributes to environmental sustainability (Rennings, 2000). The focus is on environmental and sustainable innovation, and includes all kinds of innovations that support this, from smaller incremental process innovations to larger radical innovations with higher impacts. All types of innovations that contributes to sustainability, like changes in processes which can lead to a reduction in the use of power or waste, can be classified as eco-innovation. It is an umbrella-term that frames all socio-technical change towards environmental sustainability, and shelters many meanings (Colombo et al., 2019, p. 3). The term has long been used by the European union who started using it back in the early 1990´s, and it became the center of their sustainability policies (Colombo et al., 2019, p. 4). They designed two initiatives to promote and enhance eco-innovation; the "Eco-innovation Action Plan" and the "Horizon 2020" program.

There are different motivators for organizations to focus on eco-innovation. Regulations and incentives from the government, new opportunities and public pressure drive organizations to adapt and/or develop eco-innovations; regulation, technology push and market pull (Demirel & Kesidou, 2019). The government tightens their regulations and incentives for organizations to act more environmentally friendly. Eco-innovation introduces new opportunities for organizations to make their products and production processes more environmentally friendly, which is the technology push. Finally, the public, especially the customers, want and sometimes demand "green" products and supply chains (Demirel & Kesidou, 2019). Hence, organizations now have to meet the markets "green" demands. There is therefore both economic and competitive advantages for organizations to focus on eco-innovation. By focusing on eco-innovation and becoming more sustainable organizations can get ahead of regulations and avoid sanctions, they can discover new channels, processes and innovations which can cut costs and give them an advantage, and they position themselves better with the consumers who demand more sustainable products and services.

Previously in the chapter many possible advantages of employees contributing to the innovation work have been presented. This also applies for eco-innovation and might be even more relevant due to the growing focus on sustainability and the environment in

the past years, but also the fact that the employee's incentive to engage in the organizations innovation work might be different when it comes to eco-innovation. A two embedded case study of environmental bottom-up innovation in manufacturing companies found that the employees motives for self-initiated eco-innovation could be triggered by two things (Rohrbeck & Linneberg, 2019). The first was the perception of an opportunity to alter and enrich their jobs by taking on a new task that provides meaning and that they can take ownership over. The second was that the employees' motivation could be strengthened by a sustainability-driven desire to innovate. The first trigger involves any type of employee driven innovation initiative. The second, however, brings a new motivation that is very relevant in today's climate; the desire to join the innovation work because of the implications it can have on the environment.

The environment and sustainability have become a major concern for many. People want to contribute to a more environmentally friendly and sustainable future. As many as 4 out of 5 Norwegians claim that they want to change their everyday habits for the sake of the environment (Norad, 2018). They care about the environment, independently of their work place, and whether or not their workplace does. Therefore, it is not hard to imagine that those who try to make their own private life more environmentally friendly, would also want to make their workplace more environmentally friendly as well. Buhl et al. (2016) conceptualized the concept of employee-driven eco-innovation (EDEI), which they defined as "ordinary employees' voluntary engagement in innovation activities within an organizational context that, intentionally or not, lead to environmental improvements". The notion of green employees is highlighted, as employees who hold a "green identity". Buhl et al. (2016) claim that the organization can benefit from these employees, as they are proactivity concerning the promotion of eco-innovations, while the green employees can get to act out their environmental convictions and reach attitude-behavior-consistency. It is expected that these employees are particularly striving to introduce their private environmental attitudes and habitual practices to their work environment (Buhl et al., 2016).

Employee commitment have been found to positively influence green performance (Sharma et al., 2021). Sharma et al. (2021) recommend focusing on building an adaptive green culture to increase the employee's commitment, which could lead to more eco-innovation. Wang (2019) encourages managers to support and shape green culture to

mobilize and direct the employees' energy to achieve green innovation, through the sharing of green culture value and knowledge within the organization. Another study on CSR and employee innovative behavior found that CSR initiatives of SME´s induced the innovative behavior of employees at the workplace, leading to more employee driven eco-innovation (Li et al., 2021). Hence, a focus on green values and eco-innovation can inspire and cultivate for the employees to participate in eco-innovation (Sharma et al., 2021; Wang, 2019; Li et al., 2021).

2.6 Conceptual framework

The following conceptual framework have been produced based on the framework from Haq et al. (2017), which have been altered to include new factors affecting employee's motivation and intention to innovate, to illustrate the focus of this study. The synthesizing of the five factors from Haq et al.(2017) and the cultural factors from Amundsen et al.(2014) are illustrated on the left side of the illustration. Which are the factors that have been proven to positively impact employee's motivation to engage in employee driven innovation. A factor labelled "eco-innovation" have also been added. This framework is made by the authors, and show factors that can, based on their degree, motivate employees to engage in the organizations innovation work. A high degree of perceived failure tolerance, communication openness, a high degree of autonomy, a high degree of perceived reward fairness and an individual sustainability driven motivation to innovate is all believed to increase the chances of employee driven innovation. These are also all factors that can be present to some degree, without the organizations working targeted towards employee driven innovation. Hence, there can be a climate that supports it, without it being knowingly or consciously worked towards.

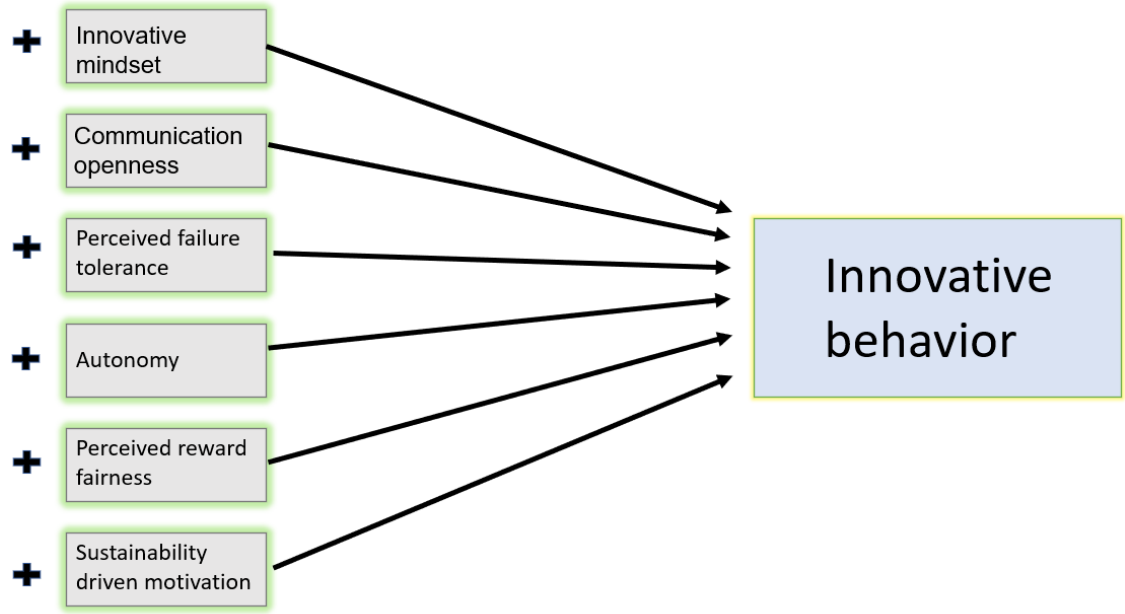

Figure 1. Factors influencing employee's innovative behavior.
Source: elaborated by the authors.

2.6.1 Research questions

In this chapter the concept of employee driven innovation has been conceptualized, and the theoretical framework for this study have been presented, which will be used to answer the research questions of this study. The questions are also linked to the types of organization used to answer them. These are organizations that are considered to be very innovative, with a strong focus on eco-innovation.

RQ1: Do the innovative organizations consider their employees to be a valuable source of innovation?

This research question is simply to investigate if the organizations think of their employees as innovation sources, and if it is something they value in the organizations. It is not a given that employees' innovative abilities are appreciated, valued, or even acknowledged. Even if it is valued, it might be overshadowed by other sources. This research question is designed to uncover this.

RQ2: What factors do the organizations use, and do these factors yield results in the form of employees contributing to the innovation work?

This research question is linked to the factors outlined in the conceptual framework and subchapter 2.4. The aim of this research question is to examine to which degree these factors are used, which of them are used, and based on this, how much or little incentive to innovate the organization receives from their employees. The idea is that there will be a pattern between these factors and the degree to which the employees participate in innovation. Another aim is to investigate to what degree an environment where employee driven innovation can be fostered, based on the factors outlined, without the organization knowingly working towards it. As these factors are not solely pertain to employee driven innovation.

RQ3: How does eco-innovation affect the intention and motivation of employees to participate in employee driven innovation activities?

The aim of this research question is to investigate if employees are more prone to participate in innovation when it pertains to sustainability and environmentally friendly innovations. The participation concerns both bottom-up self-initiated participation, and participation in top-down initiatives. This research question is also in line with Rohrbeck & Linneberg (2019) study, and our personal theory that since a lot of people are concerned with the environment and sustainability in general, and not just pertaining to their workplace, they might have a higher willingness to contribute in the innovation process when it applies to eco-innovation. It is also inspired by Buhl et al. (2016) who requested research that investigate whether a personal sustainability orientation of employees also leads to a more resourceful innovation behavior.

3. Research design and method

In the following chapter, the methodological choices that form the basis for answering the research questions will be elaborated. First, the research design and approach will be presented, led by a presentation of the research method. Then the data collection methods and choices will be presented. Finally, the quality of the study and data will be discussed, followed by a discussion of the ethical considerations regarding the study.

3.1 Research design

The research design is the plan of the research project (Myers, 2020, p.43). The design involves the various components of the research project, like the philosophical assumptions, the research method, the data collection techniques, data analysis technique and the writing up. It gives guidelines and a form of "roadmap" for the project, however, as qualitative research often is iterative, changes might happen along the way. This study is based on an interpretive epistemology. Every research project is based on a philosophical assumption about the nature of the world, and how to obtain knowledge about the world (Myers, 2020, p. 50). In interpretive research access to reality is assumed to be given through social constructs such as language, consciousness, shared meaning and instruments (Myers, 2020, p. 70). Interpretive researchers try to understand phenomenons through the meaning people assign to them. A key feature of social science is the double hermeneutic, which recognizes that the social researcher are subjects and hence just as much interpreters of the social situations as the people being studied are (Myers, 2020, p.71). The social researcher does not stand on the outside looking in but have to look from the inside to understand a particular phenomenon. In order to examine the phenomenon, the researcher must speak the same "language" as the people being studied, or at least have a way of translating it. This concept is fitting in this study, as we as researchers have a degree in economics, therefore able to understand much of the language and the meaning the subjects has given it.

Since we had limited knowledge of the subject, we decided to use an exploratory design. Our research process thus began with examining and mapping existing research and secondary data in the field before we began to collect primary data. This approach was the most appropriate as we needed to gain an insight and overview of the topic, and more knowledge about the field. A qualitative method has been chosen for this study to get a deeper understanding of how the organizations handle employee driven innovation and what affects the employee's incentive to contribute, as well as the affect eco-innovation opportunities has on the employees. Myers (2020, p. 97) define this research method as "a strategy of enquiry, a way of finding empirical data about the world". Qualitative research allows the researcher to understand the context in which the decisions and actions take place. This was considered necessary to get a full understanding, as well as an appropriate method for gathering a deeper understanding.

3.2 Research approach

The choice between research approaches basically comes down to the degree in which established theory is used in the study (Myers, 2020, p.48). The most common distinction is between inductive reasoning and deductive reasoning. When a researcher uses deductive reasoning, they begin from the "top-down", usually with a theory or some hypotheses, which is then tested against the empirical data collected. If inductive reasoning is used, on the other hand, the researcher starts "bottom-up". Data about the topic is collected first, and the researcher tries to find patterns leading to more tentative hypotheses which can be developed into a more general theory (Myers, 2020, p.48). The inductive reasoning is more exploratory, while the deductive reasoning could be viewed as more confirmatory. There is also a third, not as much used, type of reasoning called abductive reasoning. In this type of reasoning the creative aspect of theory development is emphasized. In this study deductive reasoning was mostly used, where we used the basis of the theory as our starting point, and then tested this against our empirical data. There is a lot of research on employee driven innovation and green innovation, hence it felt necessary for us to use it. However, the research process also had inductive elements as well. An exploratory approach was used to identify new or unexpected factors or elements relating to the employee's motivation to contribute in the innovation work or green innovation. This was accomplished by using a flexible semi-structured interview guide, stimulating the respondent to speak freely and opening for follow-up

questions if the respondent brings up something new of interest. A purely deductive approach would on the contrary only entail the use of predetermined variables. This would hinder the identification of new factors and make it impossible to assess if the factors analyzed were the most relevant for understanding employee's motivations. The mix of approaches also resulted in the research process not being linear, but an iterative process, which research often is.

3.3 Method

3.3.1 Multiple case study

This research project is a multiple case study. Myers (2020, p. 124) define case study research as "Case study research in business uses empirical evidence from one or more organizations where an attempt is made to study the subject matter in context." Case study research is applicable both for building and testing theory, the latter being the most common (Myers, 2020, p. 120). As this study is building on former theory, this method is considered very appropriate for this study. The study also wants to examine and test if the factors from the theory on employee driven innovation is applicable in the organizations. The benefit of using a multiple case study is that it allows for more empirical evidence, which increases the robustness of the study (Yin, 2018, p. 102).

3.3.2 Selection of cases

According to Yin (2018, p.103) it is appropriate to use a replication logic in the selection of cases for a multiple case study. There are two different replication logics that can be used in multiple case studies, namely literal replication or theoretical replication (Yin, 2018, p.103). With literal replication the choice of case is based on the prediction of similarities, while in theoretical replication the choice of cases is based on the expectations of different results in the cases being studied (Yin, 2018, p. 103). Literal replication was mainly used in this study. The organizations in this study are very different, but at the same time they are very similar. They are all associated with the charging of electric vehicles, in different capacities. They are all considered as innovative firms and they are all located near each other, in western Norway. They are

however also quite different in some forms. They are at different places in their development, from almost start-up to quite established, and with different standings in different markets. These differences allow us to compare and investigate whether it has an effect on employee driven innovation, while also making the study more relevant for a larger group of organizations. Our theory was that even though they are very different in some ways, the results would be quite similar.

3.4 Data Collection

3.4.1 Interview as a method

In-depth interviews were used to collect data in this study. Interviews are one of the most important data gathering techniques for qualitative researchers in business and management, as it allows the gathering of rich data from respondents in various roles and situations (Myers, 2020, p. 184). According to Yin (2018, p. 130) it is important to plan how the data is going to be gathered, analyzed and used, before the data collection commence. Myers (2020, p. 187) identifies three different types of interviews; structured interviews, unstructured interviews and semi structured interviews. Semi structured interviews are somewhere in between structured and unstructured interviews. Unlike unstructured interviews there are pre-formulated questions, but unlike structured interviews, there is no strict adherence to them, and new questions can emerge during the interview. This approach was chosen due to the choice of mix between inductive and deductive reasoning. To exploit the use of inductive reasoning better, a semi structured interview guide gives the opportunity for follow-up questions if the informant brings up something new of interest and stimulates the respondent to speak freely and openly. This is not possible with a structured guide. However, a structured guide gives ease in the analysis as all questions are the same and in the same order, nevertheless, an semi structured guide will still be easier to analyze than an unstructured one. An unstructured guide, would not fit in with the choice of deductive reasoning.

3.4.2 Design of the interview guide

As mentioned in subsection 3.2 and above, the mix of inductive and deductive reasoning was reflected in the design of the semi structured interview guide. Specific theories about what engages employees to join the innovation work and how green innovation could amplify this, was identified first, following the deductive approach. The interview guide was designed based on these theories, to allow us to assess whether the theories aligned with the reality of the respondents. Open questions about what the respondents thought regarding employee driven innovation was also included, so the design facilitated exploration into what might drive employee driven innovation. This highlighted the inductive approach and gave us the opportunity to investigate whether there were other factors affecting the employee's motives for joining the innovation work, then what had been found in earlier theory.

3.4.3 Conduction of the interviews

When collecting and processing data material, it is important to take into account privacy and personal information. A request was sent and approved by NSD before we started collecting data. We made sure we had informed consent before the interview started and had a consent form for the participants with information about their rights. Most of the interviews were individual, except for one where two of the informants participated at the same time. This was the only interview that was not in person but was done by video call. This was done due to time and travel distance. In comparison to the other interviews, the use of video call did not seem to have any effect on the interview. The other interviews were done at the informant's work place and lasted between 20 to 50 minutes. Every interview was taped, with the informant's consent. This allowed us to transcribe the data material after the interviews with the exact words and expressions that the informants used, making sure the answers were presented correctly.

3.4.4 Analyzing the data

Once the data material has been collected, a procedure for how to analyze it should be clarified. The qualitative researcher usually ends up with huge amounts of data, and the

researcher has to figure out what to do with all this data, hence the analysis and interpretation of this data are often focused (Myers, 2020, p. 250). There are different methods to use when conducting qualitative data analyzes, but it is mostly about examining, categorizing, setting up a table, testing or in another way linking empirical findings (Yin, 2018, p. 237). The huge amount of data that was gathered needed to be summarized and delimited. This was a relatively challenging process, which was solved by going through the interviews multiple times where patterns and the various topics that were rooted in theory were highlighted and gathered.

3.5 Evaluation of the quality of the data

3.5.1 Validity

In qualitative research reliability and validity are often used as criteria for quality (Johannessen et al., 2011, p. 243). The validity of a study refers to the appropriateness of the measures, and if it measures what it is supposed to measure. Validity in qualitative research is about the extent to which the researcher's methods and findings correctly reflect the purpose of the study and represent reality (Johannessen et al., 2011, p. 244). It is common to distinguish between three types of validity, namely construct validity, internal validity and external validity. Construct validity is about identifying the correct operational measures for the concept that's being studied (Yin, 2018, p.87). It is concerned with whether the empirical data actually measures the concepts they were intended to measure. In case studies it is common to find large amounts of data related to the study and the problem, which has also been the case in this study. This can lead to one drawing subjective interpretations based on what one think is correct, hence one becomes unable to maintain objectivity (Johannessen t al., 2011). To avoid these types of subjective interpretations, concepts and ambiguous words have been defined and explained, both in the study and to the respondents. Follow-up questions have been used in the interviews were the meaning or intentions of the respondent have not been clear to us, to make sure we assign the right meaning to it.

Internal validity seeks to establish a causal relationship, where certain conditions are assumed to lead to other conditions, and to which extend the inferences are correct (Yin, 2018, p. 87). A threat to the causal inference in this study is that the data is based

partially on “perception data”. That is data based on the informants own evaluations of the effect of doing things in a certain ways. This poses a threat to the correctness of the inference. However, the authors would argue that the perception data in this study is a valid measurement, as the respondents own evaluations are more specific, compared to other measurements, like macro-variables, that are more broad and subject to many interpretations. Furthermore, the use of several informants allow for adjustment and comparison of the perception data, further validating them. In qualitative research, internal validity can also be referred to as credibility, which deals with whether the researcher's approach and findings represent reality and reflect the purpose of the study correctly (Johannessen et al., 2011, p. 244). The goal is to examine whether the qualitative study has been carried out in a trustworthy manner. To ensure credibility in this study the choices made regarding selections, approach, choice of method etc. have been thoroughly and carefully made. These choices have also been discussed with the supervisor and other professionals, to find the best approach for our study.
Internal validity focuses on the researcher's understanding of reality and how the findings correspond to it.

The external validity concerns whether the findings from the case study can be generalized (Yin, 2018, p. 87). Because of the small and narrow sample in this study, there are no conditions for making statistical generalizations on the factors affecting employee driven innovation and green innovation. However, Ebneyamini & Moghadam (2018) state in a reference to Patton (1999) that the validity, meaningfulness and insights that are generated from qualitative research have more to do with the information richness of the cases and the observational/analytical capabilities of the researcher, than with the sample size. Furthermore, this multiple case study approach may provide conditions for theoretical generalization. According to Yin (2018, p. 80) it is possible to make an analytical generalization on findings from case studies which can be based on *a)* confirmation, modification or refutation of theoretical concepts the researcher refers to in his/hers case study, or *b)* new concepts that arise after completion of the case study. We would therefore argue that this study can make an analytical generalization based on former theoretical concepts, and that the richness of the cases, as opposed to a statistical sample size, bring meaning and validity to the study. However, we will not be able to draw statistical generalizations from this study.

3.5.2 Reliability

Reliability is concerned with the data of the study, what data is used, how it is gathered and how they are processed (Johannessen et al., 2011, p. 243). It is about whether the operations in a study can be repeated, and lead to the same results (Yin, 2018, p. 87). The goal is to minimize mistakes and bias in the study. In qualitative research it can be difficult to achieve reliability as the data is context bound and often not based on a structured data collection technique, furthermore, the researchers are involved themselves as instruments and interpreters (Johannessen et al. 2011, p. 243). The interview guide has been added to this study to strengthen the reliability. However, as it is a semi structured guide, every interview was different, which reduces the reliability. However, the authors would argue the use of a semi structured guide was a necessary choice to explore and gain a fuller understanding of the organizations and the factors studied. According to Johannessen et al. (2011, p. 244) the reliability of a qualitative study can be strengthened by an in-depth description of the context and an open and detailed presentation of the processes throughout the research process. We have tried to do this to the best of our abilities, to further strengthen the reliability. Furthermore, according to Yin (2018, p. 102), using multiple case studies could increase the study's reliability by including a broader context and forming a deeper understanding of the phenomenon being studied. This also raised the reliability of this study, as the results from the study is based on a deeper understanding from more than just one organization.

3.6 Ethical considerations

Several measures were taken to address ethical concerns in this study, while there were also some ethical dilemmas that emerged. Before any data was gathered, an application regarding the research project was submitted to NSD (Norges forskningsråd) and approved. Throughout the project process, the current rules and guidelines for the collection, storage and destruction of data to secure the informants' personal information has been followed. An important ethical principle when doing qualitative research is informed consent. This means that the informants should, as far as its possible, “be enabled freely to give their informed consent to participate and advised that they can

terminate their involvement for any reason, at any time" (Myers, 2020, p. 89). Before every interview the informants received a consent form constructed via NSD that they had to sign (see appendix 3). This form informed them of the project, what their interview would be used for and that participation was optional and that they were free to stop their participation at any moment. This form is important to ensure the interviewees feel confident about their rights.

When doing interviews, it is also important to inform the participants at the start what you are doing, why you are doing it and what you will do with the findings (Myers, 2020, p. 91). Misrepresentation of the purpose of the research, can be considered an ethical breach. This is where an ethical dilemma appeared in this study. To get a more reliable answer regarding employees being considered as an important source of innovation, the focus of the study was said to be about sources of innovation. Employee driven innovation was not mentioned beforehand, to see if the informants would mention employees on their own when asked about innovation sources. This is an ethical dilemma as the full intention of the study is not disclosed. However, it was not a lie and it was done in an effort to make the data more reliable and authentic. This decision was made and discussed with staff at Høgskulen på Vestlandet. We will therefore argue that since this decision was made in an effort to ensure quality of the data and it was not a big misconception of the study, that it was acceptable.

4. Findings

In this chapter the findings from the study will be presented. First the case organizations will be briefly presented, followed by the findings regarding employees as an innovative source and how they can contribute to the innovative work of the organizations. This is followed by a presentation of the findings in regard to the factors associated with research question two. Lastly, the findings regarding how and if eco-innovation affect the employees intentions to innovate will be presented.

4.1 The case organizations

4.1.1 Case 1 Zaptec

ZAPTEC is a Norwegian technology company that designs, manufactures and sells charging stations and software for charging electric cars. It is a fairly new company, started in 2012. Zaptec is a market leader with their pro charger for the B2B market, and now focuses a lot on their go charges for the home market, where they are challengers. Zaptec will throughout this chapter be referred to as case 1.

4.1.2 Case 2 Wallbox

Wallbox AS is one of the leading players in electric car charging in the Nordic region. Their head office is in Barcelona, but they also have branch offices in Stavanger, Stockholm, Copenhagen and Helsinki. They were established in 2015 and have around 1000 employees across their branches. Wallbox will throughout this chapter be referred to as case 2.

4.1.3 Case 3 Haugaland Kraft

The Haugaland Kraft Group consists of a parent company and 3 wholly owned subsidiaries. Their main activities are production, transmission and sales of electric power, as well as development / operation of fiber networks. Their main office is in Haugesund, with branches in Fitjar, Sand, Sauda, Stord, Ølen/Skånevik and Fjelberg. The organization was established in 1998 and have about 470 employees.

As an energy provider Haugland Kraft operates in a market characterized with high competition. After a period of high electricity prices and new innovative competitors they have faced a lot of competition in the market for smart control. In recent years they launched their app “smart hjem”, a smart tool for monitoring, and eventually controlling power consumption from phones called “Kraftplugg”, and they have also introduced smart-charging for electric vehicles. Using their app, electric vehicles are charged when the electricity prices are at their lowest. Haugaland Kraft will from now on be referred to as case 3.

4.1.4. Case 4 Kople

Kople builds, operates and supports charging systems with lightning chargers, fast chargers and normal chargers in public parking lots, at commercial buildings and shops, in hotels and destinations, and in housing associations and condominiums. It is a very new company established in 2019, when all previous and future electric car investments in the Ringerikskraft group were grouped under the brand Kople. Kople AS is owned by the investment fund Cube III and Ringerikskraft AS. The company has a considerable focus on sustainability and the green shift and was certified as a Miljøfyrtårn in 2021. Kople will from now on be referred to as case 4.

4.2. The employees as innovative sources

In this subchapter the findings regarding research question one will be presented, as well as findings regarding how they are a source, how the employees can contribute to innovation and limitations to their involvement.

RQ1: Do the organizations consider their employees to be a valuable source of innovation?

4.2.1 Are the employees seen as innovative sources?

It is clear to see that the employees in the organizations are seen as innovation sources. All the informants mention the employees when asked about the most important

innovation source. Some mention them at once, some mention a few different sources, but employees are always mentioned.

"One of them is probably the competitors, technological advances, but the most important thing we have is probably the people we have. Because there is never one source, there are many sources, but people are definitely the most important for future competition" (Informant 1, case 1).

Some other sources that were mentioned were the customers, competitors, technological advances and engineers. Engineers are employees, however innovation is part of their job, so they were not factored in as employees.

The employee's expertise and knowledge are highlighted as part of why they are a source.

"A lot of our ideas are from our employees, as I said earlier, a lot of our expertise is from our employees, there are a lot of good ideas, we have a lot of expertise in electricity, telecommunications and networking, etc. That is probably the most important and our biggest advantage in terms of the new competitors."

(Informant 1, case 3).

The knowledge the employees had were considered valuable, and the main reason why they were an important innovation source. Furthermore, the employee's capabilities in regards to ide generation was also highlighted. The case organizations receive a lot of ideas from their employees, some of these got used, some did not. Smaller, more incremental changes that goes more or less unnoticed is also a way in which the employees contributed. Especially case 3 reported that over time there are a lot of smaller changes done by the employees. This could be a faster way of installing something, a new way of doing a smaller job, that then becomes the new way of doing things. This is small changes that might be seen as unsubstantial, but over time it has a bigger impact, like more efficiency, time saved or more functionality.

4.2.2 How the employees can join the innovation work

Some of the case organizations also had their own programs and practices to involve the employees. Case 3 had their own systems for registration of suggestions, as well as registration about general digitization projects. The organizations also relied heavily on digital communication, in which it's easy to reach different departments or people

through mail or other channels. Case 2 used slack channels where the employees could contribute. This will be discussed further later on. Some of the informants also reported that employees would also just come talk to them about their ideas in person when they walked past each other in the hallway or in the cantina.

Getting ideas from the employees is appreciated, but it might not necessarily lead anywhere. "*There are many employees and many ideas. It would have been easier if there had been ideas that had been worked through*" (Informant 2, case 3). Simple ideas were found to not always be enough, whereas it would be an advantage if the employees would prepare and research their ideas beforehand. *"The preparation must be done. We do not initiate ideas to initiate ideas. Far from it, it should be a documented, good idea for implementation, etc. Come up with ideas, but be ready for challenges."*(Informant 1, case 1). "*It may be a good idea, but then one may not have done all the work around the idea to make sure that we would make money on this and how useful it is."* (informant 2, case 3). Hence, the employees should be prepared for questioning in every organization. "*You present this idea and show what it does and why it should be implemented, then you point to why this should be prioritized over something else. We challenge it a bit."* (Informant 1, case 4).

The degree to which the employees can join the innovation process and see their ideas throughout is varying. Some cases, like case 1, put a bigger emphasis on the employees taking ownership and joining the process, but even they see that there are some limits. *"Ownership is important. But of course if you are in support and have come up with a good idea, you cannot join the entire development process, you have in a way your area of work"* (Informant 2, case 1). *"You get to follow it up and define how it is followed up (..)then someone will implement this.*"(Informant 1, case 4). The ideas and engagement is appreciated, but there are limits for how far the employee can join the innovative process given their roles in the organization, "*If you come up with an idea then you have to control it as far as possible, until someone else has to take it, for whatever reason"* (Informant 1, case 1). Some might get to join new adventures, while for some the journey might stop after their "pitch".

4.3. The factors

In this subchapter the findings regarding research question two is presented, which is connected to the factors presented in the theoretical framework; an innovative culture, communication openness, perceived failure tolerance, autonomy and perceived reward fairness.

RQ2: What factors do the organizations use, and do these factors yield results in the form of employees contributing to the innovation work?

4.3.1 Innovative culture

A good work environment is highlighted throughout the cases. It is seen as important to uphold an environment where the employees thrive.

"We eat lunch together, we do not eat in the offices. We talk when there are not too many restrictions (covid), we can have a beer here at 4pm on a Friday, and we facilitate it. We have a lot of fun here and there is a high ceiling, I have not experienced any major conflicts yet" (Informant 1, case 1).

The informant also adds that they have gaming nights, were the employees bring their VR equipment, and that they are all going to Zurich in June. "*It is in a way a very good working environment. There are several dimensions, but in general it is a good environment, but it probably varies depending on where you are*." (informant 2, case 3). The informant is referring to the different departments of the organization. Both informants from this case highlight the low turnover in the organization, "w*hen people start here they do not quit*" (Informant 1, case 3).

The informants view innovation as somewhat part of the culture. "*Innovation is where we came from (..) we came via start-up and creativity, and a small desire to make the world a little better on the energy side, and make things work and play in teams"* (Informant 1, case 2). The organizations try to make the employees feel like they can and perhaps should participate in innovation. "*Everyone who works here has a strong impact. We facilitate and we try to preach/brainwash you to feel that you mean something and that you give back."* (Informant 1, case 1). "*We try to make it a part of the culture that it is possible to make suggestions and take ownership of the idea and be*

given the responsibility to carry out an analysis." (Informant 2, case 4). In case 3 innovation as part of the culture has become more prominent more recently, as they have released new products and an app.

"I think it has really happened lately, I think that Haugaland Kraft´s (..) has felt a little confident in doing our core business which is to sell electricity, add fiber, sell Altibox and build networks (..). Therefore, I think people have noticed a change where we have come up with new products on the assembly line, which I think has given a feeling that they are in a forward-looking company." (Informant 2, case 3).

They differ from the other organizations as they have been around for much longer, however, new competition and a lot of recent innovation seem to be turning their more "laid-back" attitude around.

Case 1 and 2 were both located in the same building, "Innovasjons bygget" translated to "the innovation building". It becomes apparent when walking into this building that innovation is the theme. The glass doors had words like "innovation" and "new thinking" taped on them, which set the scene and atmosphere. All the organizations also publicly cling to the term "innovative" as something that defines the organizations.

The structure and degree of bureaucracy of the case organizations differed. Case 1 and 4 are smaller and newer companies, while case 2 and 3 are bigger organizations. Case 1 reported that "*We have a fairly flat organizational structure"* (Informant 2, case 1). This was seen to be more desirable in terms of innovation, "*I think those who come to a startup company see that they have a much greater degree of influence perhaps, than if one comes to a large bureaucratic company.*" (informant 2, case 1). While case 2 and 3 point to a higher degree of formalization and centration. However, the informants from case 1 also reported that they would need more bureaucracy as they are now heading into a growing phase. "*So, at the moment there is little bureaucracy with our growth, but in the future when we get bigger we will have bureaucracy in place*." (Informant 1, case 1). Hence, they are not opposed to this, and see it as necessary to be able to grow.

4.3.2 Communication openness

The ability to speak openly and freely was shared in all of the cases, *"I experience that in the highest degree"* (Informant 1, case 3). When asked if the informant thought the employees under him/her could easily talk to him/her, and freely express themselves, the informant replied "*Yes! Yes. cocky said, but I would have known if not. I have to have feedback on whether things work or not*." (Informant 1, case 1). Open communication was seen as important for several reasons. Firstly, as mentioned, the feedback form employees are important to know what works and what doesn't. "*We are very concerned about communicating early with each other, we also get praise for this by our leaders in the company, that they get feedback. It contributes to an open environment*." (Informant 1, case 4). When something is implemented, it is often the employees who are affected or in a position to evaluate it, hence it is important that they feel comfortable speaking their mind. Secondly, communication was seen as important for sharing. The sharing of ideas, thoughts, information and new knowledge was important for the general drift of the organizations, but also for the generation of innovation. "*We have a very open dialogue, especially with the development projects, and we say what we mean. This will lead to us creating the greatest possible value.*" (Informant 1, case 4). The communication openness was also linked to a good work environment by some of the informants. The ability to freely express themselves was depicted as both a result and a reason for a good environment, as the informants all felt they had.

The organizations also used different digital tools for better communication. Case 2 uses a lot of Slack channels for their communication, which makes it easy for people to contribute and share their ideas or opinions.

"*We can compare it to messenger groups. Only there is a slightly more orderly and efficient way to do it. Say you have an innovation project (...) Then thoughts and such just falls in. We use a lot of this, so everyone feels they have a quick and effective way to influence with this*" (Informant 1, case 2).

Case 3 also use digital tools, but they also have a system for suggestions, were the employees can send in their suggestions for improvement and ideas.

However, there might be some difficulties for the bigger organizations in regard to the different departments, companies and locations.

"*But we are big, so it may not be so easy in the highest degree to get messages across. If there is someone sitting in another part of the company such as a telecom fitter in Ølen it will probably be more difficult for him to come forward with their message. Not locally where he belongs but to us (Haugesund) it could have been better."*
(Informant 1, case 3).

Both informants from case 3 expressed that communication between the different departments could be better. This, however, did not seem to have an impact on the openness of the communication, in which they could express themselves freely, but it could be hard for some to get their messages across. Case 2, which is also a bigger organization and has headquarters in different countries however did not find communication between these headquarters as hard due to a high degree of digitalization and their digital tools.

4.3.3 Perceived failure tolerance

A high failure tolerance was reported by all of the informants, "*Yes, I experience that they cheer on us to be curious and trying*" (Informant 1, case 2). "*We are not afraid of making mistakes and there is a high ceiling for making mistakes.*" (Informant 1, case 3). Failing is seen as rather common, and almost expected to some degree *"That's a bit of the mentality we have (...) It is allowed to make mistakes, so we try to make mistakes fast, instead of doing a lot and then make big mistakes"* (informant 1, case 3). *"Well, we have done that several times, so I think that, there is openness to it, and Zaptec is good at reversing bad decisions, and a lot of it has been done lately*." (Informant 2, case 1). Failing was perceived as accepted as they were encouraged to be curious and try new things, because this was seen as the best way to find new and exciting opportunities and succeed. Further, they pointed to themselves as innovative firms, hence, to innovate and try new things, they had to be prepared and accepting of failure.

Even though the failure tolerance was high in the organizations, there were limits to this tolerance based on the preparations and aftermath. When asked how high the failure tolerance was, an informant answered *"Big. As long as you say so. That you are honest and say "here I need help", or "here I have messed up". Everyone fails before they reach the goal, all major companies have failed a dozen times before finding their niche or products."* (Informant 1 from case 1). Here, honesty was highlighted. As long as the

employees were honest about their mistakes, or where they needed help, it was accepted to fail. However, trying to hide the mistakes could potentially lower this acceptance, but then the focus was more on the intent of hiding it, rather than the mistake. The preparation beforehand also comes up as an important factor, as to whether it is accepted to fail or not. *"If what you do is based on good analysis, then that is what is important, and if it fails or it becomes a success, then that's one thing. But if you have done a bad job in advance, then that is another matter."* (Informant 2, case 3). Failing due to lack of preparation or doing a bad job did not yield the same tolerance.

The informant form case 2 also makes a distinction about where failing might not be accepted. "*It's about what role you play. If you are in the production line, no one will cheer on you if you make a mistake*" (informant 1, case 2). This example will be further discussed below regarding autonomy, but the issue the informant is trying to relay is that these employees have strict guidelines and procedures to follow. In this instance, trying to do something new should be addressed first, and the employees hence should not try to alter anything at all in this process. It is not as much about the failing, but more about how it should not be done at all without approval.

As already quoted from the informants above, the process of reversing and learning from mistakes made along the way was highlighted. Case 3 mentions how they have changed their processes to better be able to evaluate, adjust and learn throughout their processes. "*Before we used a lot more projects, but before we spent time reviewing the project but it is often too late because then it is delivered, so now there is more continuous evaluation. This has been important*." (Informant 1, case 3). They highlight the importance of being able to adjust and learn along the way, rather than looking back in the end, continuously evaluating so that mistakes can be caught earlier and reversed.

4.3.4 Autonomy

The employees seem to have fairly high autonomy in all of the case organizations. This is not to say the employees are free to do whatever they please, they have a role and things they have to do, but that they have freedom in the performance of these tasks and this role. "I*f it says that I am supposed to provide access to our product development team, then it does not say in the instructions how to find this insight, that is up to me to*

define." (Informant 1, case 2). The autonomy given is linked to what gives the employees possibilities to be creative. Autonomy is presented as something important, essential, "there must be" (Informant 1, case 2). *"It is in our action plans and strategy documents, where we will give our employees great confidence and freedom and the opportunity to contribute as much as possible.*" (Informant 1, case 3). The employees receive autonomy so that they can influence their own job, find new and better ways to do this job, and the possibility to contribute to workplace innovation.

Trust is highlighted when addressing this autonomy, "*YES, it is a lot of trust, we give trust to our employees, and of course we take it back if it is abused. But here we do not count hours. Here you come, here you deliver, you work 5 or 10 hours, it is not so important as long as the job is done."* (informant 1, case 1). Here it is clear that the employees receive a lot of freedom, but this freedom could also be taken back if misused. However, this had not been an issue yet. The employees have freedom to explore and perform their jobs as seen fit, while trusted that they will perform their duties following their role. The general perception of the informants was that autonomy was important for the innovation abilities of the employees, stating that autonomy opened for creative thinking in execution, which could lead to new ideas and innovation.

However, the findings also show that high autonomy cannot be given to every employee, there are some omissions. The informant from Case 2 used an employee at the production line as an example, stating that "*There you have a procedure and a strict path, and there you have to do it according to the instructions*." referring to guidelines and standards that have to be upheld, "*there it is more strict, there is no room to be too "creative", there are requirements we must follow, and things to relate to and so on*" (informant 1, case 2). On the other hand, the informant also added that there could be instances were they could impact their work. "I*f you do you work procedure and the job just as you should and you could also find a way to have saved production twenty seconds per unit, then that is good"* (Informant 1, case 2). However, this does not call for high levels of autonomy. This was not however, to say that these employee could not impact the processes, their work or the innovation process, but they had to take another approach, *"it matters a lot where in the phase you are creative"* (Informant 1, case 2). Their suggestions and ideas are welcomed in the beginning "i*n workshops or in value proposition*" (Informant 1, case 2). This however, will hamper their autonomy. So

even though many employees have freedom and autonomy in their work, some employees do not process the same level of freedom and autonomy due to factors involving their work tasks.

4.3.5 Perceived reward fairness

None of the case organization operate with any type of reward systems for innovation. "*No. We've had one like that, it happened sometime after I started. Or maybe they've had it before, where if you had a good idea, then you got a kind of gift check. But we do not have it now, or bonus model or anything like that.*" (Informant 1, case 3).
Even though there were no reward systems for contributing to innovation, there is possible indirect rewards present. Case 2 has an evaluation system, but this system was a general system, more of an evaluation of all over achievements. However, contributions and commitment would reflect positively on these evaluations, which in turn could lead to rewards. In case 1, the employees get an indirect reward for contributing to the growth of the company. *"All employees receive 20% of their salary in shares every 3 years, so that the company can grow and that it is tax-free. We do this to make you feel that you are part of the company, that you feel that you are part of the company, that you feel you are influencing and that you can influence your own wallet. That is the biggest reason.*"(Informant 1, case 1). Hence, contributions could lead to indirect rewards in the form of better performance, which in turn could lead to higher earning on the employee's stocks.

Other forms of rewards for participating was acknowledgement, gestures, the ability to form their roles and build on their careers. Ownership and recognition was highly focused. *"Yes, we try very hard to highlight those who have contributed, and we are very careful about that, to give the right people the credit and not just the bosses, but those who have done the job. And I feel we are pretty good at that."* (Informant 1, case 3). Smaller gestures were also a form of recognition, to show that their work was recognized and appreciated. *«I think everyday rewards are important. Give a flower if someone has done a good job, for example*" (Informant 2, case 1).

The possibility of furthering one´s role and career was also a part of what motivated people to contribute and apply themselves. "*People think it's fun to contribute. For*

example, if you are behind the name of a product, for example, you might even get a post on LinkedIn." (Informant 2, case 1). In case 2 the career building and role building aspects is associated with contribution. "*We are very much in favor of ownership, of being able to grow into one´s own role, building careers, doing new things and showing off one´s abilities*" (Informant 1, case 1). The informant makes an example of an employee from support who got the opportunity to join the establishment of new operations in Denmark, not due to his education, but his engagement, involvement and desire.

4.4 Eco-innovation and green incentive

All of the cases involved in the study had a huge focus on sustainability and eco innovation. "*We want to contribute to the green shift. That is what drives us, it is part of our vision"* (informant 2, case 1). Eco-innovation is a huge part of the case organizations focus. More sustainable products and processes is a focal point, as well as a green reputation and of course, the economic side of eco-innovation. "*This gives us the impetus that we are green, local and that many shareholders see us as one green company that actually makes money, because there are not many of them*" (Informant 1, case 1). Sustainability is important, but it also has to be somewhat financially smart.

When it came to the informants own personal incentives to contribute, the responses were mostly aligned, where most of the respondents felt a strong desire to contribute to eco innovation based on their own desire to better the environment.

"I feel I'm in the middle of it all to contribute and to contribute in the best possible way, and could not have had a better job considering my interest in the green shift, electrification and UN sustainability goals. Both in terms of climate, environment, electrification, but also in terms of social security, electrification and social responsibility. It's very meaningful, and I think a lot of the staff are very concerned about it."

(Informant 1, case 3).

"*I think it's nice to be part of that, and I think for many who work here it has an extra personal meaning, and I think that if you are concerned about it yourself, then you feel an extra commitment around the job you do.*"(Informant 2, case 1).

"The fact that we were a sustainable firm was actually my biggest motivation for applying for the job at Kople." (Informant 1, case 4).

The environment and sustainability were a subject of concern, where they were excited to be able to contribute to the solution. They also expressed that they thought this was a personal incentive to other coworkers in the organizations as well. However, not every informant found sustainability and eco-innovation as a personal incentive.

"Quite honestly? No, not very much. But it motivates many, and it is very important from a macro perspective. Extremely important indeed. It's rewarding, but it's not a factor for me personally." (Informant 1, case 1).

It also became clear that the informants wanted to contribute to eco-innovation because this was an important aspect of the organization. This was the case for the informant who did not find a personal incentive. Hence, the focus on eco-innovation in the organization made them feel obligated to contribute to eco-innovation as well. The informants also showed to their own acquisitions of smart eco-friendly products from their workplace. One informant also shared his intentions of installing solar cells for power at his residence. The eco-friendly products and services that they sell was hence also something they themselves wanted and invested in.

4.5 Summary of the findings

The findings from the case organizations are very similar in many ways. However, they do differ in some ways. This is generally connected to the size of the organization and degree of bureaucracy/organizational structure. Below, a table has been made to summarize some of the findings.

	Case 1	Case 2	Case 3	Case 4
Important innovation sources	-Employees -Technological advances -Competitors	-Employees - Customers -Competitors	-Employees -Customers (Interviews, Questioners) -Competitors	-Employees (especially sales staff) -Customers (feedback, forums) -Location owners (feedback)
Structure	Flat, little bureaucracy	Centralized, bureaucracy	Centralized, bureaucracy	Flat, little bureaucracy
Work environment	Good -A lot of work arrangements	Good	Good -Very low turnover	Good
Innovative Culture	Yes	Yes	Yes, more recently	Yes
Employee programme for innovation	No	No	No	No
Communication ways	-Digital tools, undefined which -Suggestions in person	-Slack channels -Suggestions in person	-Suggestion system for improvements and ideas -Digital tools, undefined which -Suggestions in person	-Digital tools, undefined which -Suggestions in person
Perceived failure tolerance	Yes	Yes	Yes	Yes
Autonomy	High	High -accept for some	high	high
Reward system	No -indirectly through stocks	No -indirectly through evaluation system	No	No
Perceived reward fairness	Yes	Yes	Yes	Yes
Sustainability focus	High	High	High	High
Green incentive	Yes	Yes	Yes	Yes

Table 1 Summary of findings
Source: elaborated by the authors

5. Analysis of the findings

In this chapter the findings from the previous chapter will be analyzed and compared to previous research outlined in chapter 2. First the employees as innovation sources, linked to research question one, will be discussed. Followed by an analysis of the factors linked to research question two and the incentive to join the innovation process due to eco-innovation. Lastly, there will prepositions for other organizations and managers who want to include employees in their innovation work.

5.1 Employees as a source of innovation

Previous research on employee driven innovation has shown that employees are important innovation sources (Demircioğlu et al., 2019; Kesting & Ulhøi, 2010; Høyrup, 2010; Høyrup, 2020, p. 48) due to their knowledge, experience, and potential for creative thinking (Amundsen et al., 2014, p. 26; Tidd & Bessant, 2018, p. 115). Accordingly, our findings show that the case organizations in this study consider their employees as important innovative sources, based on these qualities. The findings also confirm that there has been a lot of employee driven innovation, ranging from smaller incremental changes too everyday tasks to more advanced ideas building upon more radical innovation This corresponds with Tidd & Bessant (2018, p.115) and Høyrup (2010, p. 149) claim that everyone in an organization possess the abilities underlying innovativeness, and can contribute in innovation ranging from smaller incremental innovations, to larger radical innovations.

According to Høyrup (2020, p. 48) most of the employee involvement stems from bottom-up self-initiatives, in which the employees themselves offer up their ideas. In accordance with this, the findings show that this also applies to the case organizations, where it is mostly the employees who offer up their ideas and contributions. However, one could argue that this is also a result of indirect top-down initiatives and facilitation. The findings show how the case organizations in different ways support and facilitate for the employees to contribute, like through the suggestion system. They also facilitate through the various factors, like making an innovative culture, giving trust and autonomy, being tolerant of failure to not deter employees from trying, open communication and rewarding those who contribute, which will be discussed further

below. This corresponds with the claim of Høyrup (2010, p. 149) that regardless of how EDI occurs, it needs to be recognized, supported and organized, so that it can lead to great opportunities for the organization and economic gain.

Hence, in regard to research question one "*Do the organizations consider their employees to be a valuable source of innovation?"* this study finds that all the case organizations do view their employees as valuable innovation sources. There are many ideas that are not implemented, but realizing every idea would be unrealistic. However, the organizations do recognize the potential in their employees for innovation, and also report that the employees have contributed to innovation in the organizations, from incremental to more radical changes over time.

5.2 The factors

Through our theoretical framework we linked the factors innovative culture, communication openness, perceived failure tolerance, autonomy and perceived reward fairness, to the enhancement of employee driven incentives based on previous research (Amundsen et al, 2014; Haq et al., 2017). All of these factors were found present in the case organizations, and will be presented separately in the following subsection, followed by a discussion.

5.2.1 Innovative Culture

The implementing of a culture that fosters innovation has been found to foster employee driven innovation (Kahn, 2018; Castro et al., 2013). The findings of this study underlines this, with the high focus dedicated to innovation and contribution. Implementing, instilling and integrating innovation on both individually and organizational levels gives innovation the propensity to flourish and favorable innovation characteristics to emerge (Khan, 2018). The findings show how innovation is highly focused in the organizations, both verbally and direct, but also in some cases indirect, through the surroundings. This is heightened in the newer case organizations, where innovation as an origin lays the foundation and the guide for further growth. This aligns with Kahn (2018)´s views on the innovative mindset, where innovation is a part

of the employees mindset and hence their job. Working in an environment built upon innovation that is always pushing for more innovation, while the walls are covered in innovation quotes. Innovation could be said to be ingrained into these employees, leading them to see it as part of their job. The aspects of the cultures described by the informants fits in with Castro et al. (2013)´s description of innovation culture, in which the culture encourages the employees innovation capacity, tolerates risk, and supports personal growth and development (Castro et al., 2013).

The findings also displayed that the organizations had a very good work environment, as well as very low turn-over in some of the organizations. As well as being a result of socialization at the workplace and social arrangements made by the organization, it could also be linked to job satisfaction. It has already been established that there is employee driven innovation at the organizations and that the most common way was through bottom-up initiatives. Job-satisfaction was found by Demircioglu (2020) to be positively associated with button-up initiated innovation. Hence, the bottom-up initiatives might have had an impact on people's job satisfaction which might be a factor in why there is a good environment with little turnover. This satisfaction could then also be a reason for people to want to participate more, being an underlying factor in the innovative culture.

The findings also pointed to two of the case organizations structures being very decentralized, which according to Iranmanesh et al.(2020) were the preferred organizational structure, as the innovation culture could direct the employees to a higher degree. In the two other case organizations there was a higher degree of centralization, potentially hampering the effect of the innovative culture (Iranmanesh et al.,2020). However, the findings also showed a high degree of autonomy in the organizations. The employees had the opportunity to affect their own jobs and role, and a lot of freedom in execution of their work, giving the culture directional power, with the exception of the employees who were confined to standards and guidelines. For these employees the role of the innovative culture will not be as effective, as they are directed mostly by guidelines, instructions to follow and standardizations.

Hence, there is a culture percent in each of the case organizations which encourages innovation and makes it clear that innovation is something that is valued and desired in the organizations, and aliens with Castro et al. (2013)´s description of an innovation

culture. This culture might vary in the organizations, in form and intensity, but it is present. Even the bigger more centralized organizations describe an innovative culture. However, for case 3 this was a newer culture, led on by a an endeavor of resent innovations. Therefore, it can be concluded that the first factor “innovative culture” is present in all of the organizations and has a facilitating effect on innovation activities by the employees.

5.2.2 Communication openness

Communication openness has been found to have a positive effect on employee innovativeness (Amundsen et al.,2014; Haq et al.,2017), and the sharing of knowledge and experience between the employees has been found to positively impact innovativeness (Ye et al., 2021; Yuan et al., 2018; Novitasari et al., 2021). The findings coincides with this, as the sharing of ideas, thoughts, information and new knowledge was important for the general drift of the organizations and the generation of innovation. This knowledge sharing has been found to stimulate learning (Fenwick, 2003, p. 123) and as the antecedent of innovative behavior (Novitasari et al., 2021). It becomes apparent that open communication and allowing people to express themselves is important for the organizations, e.g. getting praise for giving feedback and the different digital communication platforms used to easily allow the employees to offer their opinions and ideas. Hence, the importance of open communication seems to be recognized, and therefore encouraged.

The open communication can also be linked to the degree in which the employees feel comfortable enough to express their ideas, ergo the most used form of employee driven innovation initiative (Høyrup, 2020, p.48). Making it an important factor in fostering employee driven innovation. The communication openness was also linked to a good work environment by some of the informants. The ability to freely express themselves was seen as important for a good work environment that people enjoyed. This environment could again be argued to be important for the employees to be comfortable expressing themselves, both to their superiors and their coworkers. Open communication could open the doors for more socializing which again could make it

easier for the employees to express themselves, ask for help, share their knowledge and their difficulties.

Furthermore, in subchapter 2.4.3 the Scandinavian management style was mentioned. All of the organizations reported that communication was open, and that there was a high emphasis on collaboration and team work, "*we are one team*" (Case 3). This collaboration and team work could be linked to the lack of competition which characterized the Scandinavian management style and culture, and be one of the reasons why the communication is so open. Grenness (2003) pointed to value cooperation, power sharing and participation, as characteristics of the Scandinavian manager. This aligns with the findings, in which cooperation and participation is highlighted, and might be an underlying factor which makes it easier for the employees to share information, knowledge and ideas; they are not in a power struggle, but a team.

However, some of the organizations did struggle with communication between departments. The interesting finding here was how communicating with a department in another country did not appear to be a problem, while in case 3, communication between departments an hour away from each other was seen as not optimal. This might have something to do with the degree in which they need, and do, communicate. If there is a lot of communication between two departments, issues would be more noticeable, then if there were less communication. Furthermore, the digital tools used could also be an explanation as to why it was perceived easer for case 2 to communicate, as this informant was extremely pleased with their digitalization. Nonetheless, this was not perceived as a big problem for case 3, and was not perceived as something that would be highly damaging to employee innovation activities.

Hence, the factor "communication openness" is found to be percent at a fairly high level in all of the organizations. Furthermore, it is perceived as important as it facilitate sharing of ideas, opinions, knowledge and expertise, and hence, it can help facilitate employee driven innovation.

5.2.3 Perceived failure tolerance

The findings show that all the case organizations have a high ceiling when it comes to failing, and that the employees know about this tolerance. A high tolerance for failure was found to have a positive effect on innovation according to previous theory (Haq et al., 2017; Cannon & Edmondson, 2005; Tian & Wang, 2014). The tolerance for failure sends a message to the employees that it is okay to try, because it is okay to fail, taking away some of the stigma and fear around trying and failing. The finding aligns with the findings of Amundsen et al. (2014) whereas the employees gain a feeling of security and tolerance, which makes it easier to try new things or suggest their ideas, which has a positive effect on the employees' innovative behavior.

It becomes clear from the findings that failure is something that is expected, and something that one can possibly learn from and reverse. This coincides with the findings of Cannon & Edmonds (2005) where failure should be redefined to be a first step in the journey of discovering and learning. This expectancy also makes the organizations more alert, and ready to readapt, like case 3 which had even learned that the way they carried out their innovation projects were not efficient enough to detect failures or mistakes along the way, and therefore found a batter way of carrying out their innovation processes. In accordance to Marzocci & Ramlogan (2019) factoring in failure as something that most likely will occur, or something acceptable, the “blow” from a failure is less damaging on the motivation and further innovation work. The findings also showed how they were used to failures and therefore not afraid to do it again as this was perceived as almost unavoidable, hence, the tolerance and acceptation of the failures had a less damaging effect on further innovation.

However, it became obvious that this tolerance would not be as high if failure was a result of poor planning, execution or analysis. Hence, there has to be sufficient effort committed for the failure to be tolerated. Another interesting finding was how this failure tolerance did not apply for some of the employees, at least in certain situations. However, one could argue that this lack of tolerance for failure have less to do with innovation and is more about not following guidelines. In this case it is more about how something has to be done, rather than the encouraging of someone to do it in another way, which in this instance would be doing it wrong.

Based on this, the factor “perceived failure tolerance” is found to be percent in all of the organizations, to a fairly high degree. However, this tolerance has its limits, and failing due to poor efforts is not tolerable. Further, this tolerance is found to be helpful in the facilitation of innovation activities as it takes away some of the stigma and fear around trying and failing, and can facilitate learning based on past mistakes.

5.2.4 Autonomy

Previous theory linked autonomy to innovative behavior in employees (Echebiri & Amundsen, 2019; Amundsen et al.,2014; Haq et al., 2017; Li et al., 2021; Demircioglu, 2020, Echebiri, 2020, p.49). All the case organizations prompted autonomy for their employees. The findings display how autonomy is regarded as highly important, as it gives the employees the opportunity to take ownership of their work, explore, and try new thing, which can lead to innovation. Confirming the findings of Echebiri & Amundsen (2019), Foss et al. (2014), Amundsen et al. (2014) and Haq et al. (2017).

Echebiri (2020, p.49) on the other hand did not find a direct positive association between autonomy and employee driven innovation, but rather an indirect effect as autonomy had a positive relationship with self-leadership which did have a positive effect on employee driven innovation. It is not unreasonable to believe that autonomy might be effecting other factors and hence only having an indirect effect. However, the authors would argue that based on the findings autonomy appears to be an important factor in and of itself. Nonetheless, if the factor is only indirectly effecting employee driven innovation, it is still affecting it. Furthermore, the defining of autonomy would also be essential here, as many would deem a high degree of autonomy as a form of self-leadership where the employees are free to carry out their assignments and work requirements as they see fit. Hence, based on the findings of these cases, the definition given of autonomy and the previous theory, autonomy is argued to be an important factor for employee driven innovation.

However, not every employee receives the same amount of autonomy, due to the nature of their work. This was work that required a more specific form of implementation, hence, there was not much room for the employees to try out new things or find their own way of doing things. One can also argue that there will always be certain tasks in

which there is not much room for autonomy, due to the nature of the task. Regardless, the lack of autonomy for some employees given specific task does not depict the whole organization. All the case organizations are hence regarded as having a generally high degree of autonomy for their employees, and this autonomy is found to be important for the facilitation of employees innovation activities as it grants them freedom to try new methods, gives them the opportunity to take ownership of their work and explore new possibilities, aligning with the findings of Echebiri & Amundsen (2019), Foss et al. (2014), Amundsen et al. (2014) and Haq et al. (2017).

5.2.6 Perceived reward fairness

Previous research showed that a reward system had a positive effect on employees innovative behavior (Hasanudin et al., 2018, p. 238), but that the perception of fairness on the rewards could affect the effectiveness of the rewards (Saether, 2020, p. 6; Haq et al., 2017). The findings show that there are no reward systems in place in any of the case organizations. However, the findings clearly show that there are rewards for contributing. Newman & Sheik (2011) and Haq et al. (2017) pointed to three forms of rewards, which from the findings were all present. Extrinsic rewards, in the form of career development opportunities, intrinsic rewards, in the form of role building, clarification and autonomy, and social reward, in the form of recognition and credit (Newman & Sheikh, 2011).

In regard to the fairness of the distribution of these rewards, the findings suggest that these are fair and that they are perceived fair to the informants, hence, presumably the other employees as well. The considerable efforts put forward to make sure the employees who had contributed got the recognition, acknowledgement and ownership that they deserved points in the direction of fair distribution. The fact that the employees want to contribute because of these rewards also points in the direction of fair distribution, as an unfair distribution would imply that they would not be sure if they would receive anything if they contributed. These findings align with the previous research showing that fairness of the distribution of rewards increased employees' motivation to contribute (Saether, 2020; Haq et al.,2017). The motivation to contribute increases as there are rewards to be claimed, and this is not clouded by the perception of these rewards not being distributed arbitrarily and unjustifiable. It could be argued that

the lack of a reward system might not matter, as it becomes clear the types of rewards one can achieve by contributing. Hence, all of the organizations are found to have a perceived high degree of reward fairness, which is also found to be helpful in the facilitation of innovation as it indicates that innovative activities are wanted, as well as it gives incentive to contribute based on the expectation of rewards and recognition.

5.2.5 Discussion of the factors

The findings regarding the factors in research question two correspond to the findings of Haq et al (2017) and Amundsen (2014), in that they are beneficial and facilitate employee driven innovation. The findings also show that the factors are not equal in all of the case organizations, and that the degree in which they are present varies. However, the factors were present in all of the case organizations, as well as at an arguably fairly high level. All of the case organizations also had positive results regarding employee driven innovation, despite these differences. The authors would argue that these findings display how the factors only need to be present to a certain higher degree, not necessarily excessively. Furthermore, the combination of the factors might be relevant as well, as it is clear to detect that some of the factors are related and influence each other. It is not possible to say given the scope of this study to which degree they influence each other or if there would be other outcomes if one of the factors were missing or how big of an effect this would have. Nevertheless, it is considered important to point out these overlaps found in the study.

Autonomy is one of the recurring factors which has been found to affect or be a factor in other factors. Autonomy is a factor in and of itself but can also be considered an intrinsic reward according to (Newman & Sheikh, 2011). Hence, autonomy can help engage employees to participate on the incentive of receiving more autonomy as a reward, but also in and of itself. Furthermore, in the effect of the innovative culture autonomy appears to have a mediating effect, following Iranmanesh et al. (2020) claims regarding the amount of direction given by the culture. Autonomy was also found to mediate the relationship between CSR initiatives and employee innovative behavior by Li et al. (2021), where a higher degree of autonomy led to more innovative behavior. One could also argue that without autonomy, failure tolerance would not have the same reach, as employees would not have the autonomy to try new things. The same could be

argued for the innovative culture, as the culture would not have the same effect if the employees did not feel that they could try new things and contribute.

The connection between open communication and a good work environment was also uncovered in the findings (see 5.2.2). A good work environment and open communication was argued to be important for the employees to be comfortable expressing themselves, as well as opening doors for more socializing between the employees. This could further be connected with the theories on employee driven eco-innovation and employees with green identities. Buhl et al. (2016) claimed that employees who had green identities were expected to be striving to introduce their environmental attitudes and habitual practices to their work environment and be proactive concerning the promotion of eco-innovations. Hence, open communication could further incentivize these employees to share their knowledge about the environment, as well as encourage others to share their views and motivation for eco-innovation. This could also aid in the facilitation of a green culture.

In regard to research question two "*What factors do the organizations use, and do these factors yield results in the form of employees contributing to the innovation work?"* this study finds that all the factors outlined in the conceptual framework are used, and yield results to employee driven innovation in the case organizations. All of the factors are found to help in the facilitation of employee innovation activities. Furthermore, these factors are not just separate factors, some of them influence each other. Hence, having just some of the factors might not be enough, and the combination of factors might be as important for the facilitation of employee driven innovation. As previously mentioned this study is not able to tell which degree they influence each other or if there would be other outcomes if one of the factors were missing or how big of an effect this would have. Moreover, the nature of this study is not able to conclude if and which factors are most and least important for the facilitation of employee driven innovation. However, based on the above discussion and the findings, autonomy and open communication could be argued to be the most relevant as they are interrelated to the other factors. Furthermore, these were also seen as highly important to the informants in regards to employee driven innovation.

Lastly, one of the motives for research question two was to investigate the possibility of fostering an environment where employee driven innovation could thrive without an

organization working focused towards it. As the factors were not specific for employee driven innovation and is percent in organizations, to varying degrees, even if they are working towards it or not. The findings and results indicates that this is possible, as long as the factors are percent to a higher degree. However, even dough the case organizations did not have any employee programs for innovation, they did perceive their employees as valuable innovation sources. According to Høyrup (2010) employee driven innovation needs to be recognized, supported and organized. Hence, if an employee decides to try and engage in innovation through bottom-up self-initiative, it does not necessary lead anywhere unless it is recognized and appreciated by management. So, in conclusion, this study indicates that it is possible for an organization to create an environment where employee driven innovation can flourish without working specifically towards it, however, for it to prosper the management has to recognize it, support it and organize it.

5.3 Eco-innovation

In accordance with Demirel & Kesidou (2019) the findings show that there are several motivations for the firms to engage in eco-innovation. There are both economic and competitive advantages associated with sustainability and eco-innovation. There is market pull from the customers who want green products and services, technology push in the form of new possibilities, and regulations, but this was not that influential as the organizations already were quite sustainable. Further, the findings show that eco-innovations and sustainability are also to some degree reliant on the expectation of economic gain. The eco-innovations should in some ways be fruitful, however, the organizations made environmentally friendly choices and actions that did not gain any additional economic gain. Projects were not started without there being some form of economic gain, however, these projects could include choices that were merely environmentally friendly. Hence, the organizations went past the expectancy in some cases to be more sustainable.

The findings show how the case organizations have an extensive focus on sustainability and eco-innovation. This could also be a reason for the employee's motivation to participate in eco-innovation, building on Sharma et al. (2021), Wang (2019) and Li et al. (2021). The immense sustainability focus in the case organizations could be

classified as what Sharma et al (2021) and Wang (2019) describe as a green culture. This could be part of what's motivating the employees, giving them incentives to join eco-innovation because it is important for the organization. This was indeed the position of informant 1 from case 1. They might not have had a personal attachment to sustainability, but the culture in the organization is influencing them. In the same way the culture could heighten the desire of the employees with a personal desire to participate. An interesting finding was that the employees themselves invested in the products. This could further be seen as an integration of the culture in the employees own personal life.

The study confirms the findings of Rohrbeck & Linneberg (2019) on how the employees' own environmental initiative and concerns lead them to want to contribute to eco-innovation in their workplace. It also underlines the claims of Buhl et al. (2016) that the green identities of employees make them want to contribute and let them act out their environmental convictions and reach attitude-behavior-consistency. The findings also indicate that a high focus on sustainability at the organizations and the facilitation of a green culture motivate the employees to contribute in eco-innovation. Based on this, in regard to research question three "*How does eco-innovation affect the intention and motivation of employees to participate in employee driven innovation activities?*" This study finds that a high focus and implementation of eco-innovation have a positive effect on the employee's intention and motivation to contribute and innovate.

5.4 Propositions

Based on the findings in this study the authors would recommend managers who want to increase their employee's innovative activities to implement all of the factors, as best as possible, to facilitate employee driven innovation. An innovative culture should be created to make innovation feel like a natural part of the employee's job, as well as something that is valued and wanted. The communication should be open, so that the employees feel free to express their opinions, both to their supervisors and to their fellow colleagues. Systems for suggestions and ideas could be made, as well as digital communication tools where the employees can discuss and suggest matters of innovation, like in the case organizations. The employees should receive autonomy as far as it is possible, so that they have the ability to perform their job in the way they see

fit, as well as try new methods, which can lead to innovation. There should be a high failure tolerance on innovation, which should also be visible, so the employees know that if they try something new they are allowed to fail. However, as in the findings, all failure should not be accepted. If someone does a bad job resulting in failure, it should not be acceptable. This could set a dangerous precedent. Rewards for innovative behavior of the employees should also be rewarded in some ways, either through extrinsic, intrinsic, social or a combination of these rewards. However, it will be indicative that these rewards are distributed fairly, as well as perceived so by the employees. Furthermore, the organizations should increase their CSR activities and focus. If the organization want more eco-innovations the authors would suggest trying to create a green culture, to incentivize the employees. Focusing on eco-innovation in the hiring process as well could help bring in employees with green identities who will have a higher incentive to contribute in employee driven eco-innovation.

6. Conclusions and reflection

In this chapter the study is concluded. First, the conclusions drawn from the study in regard to the research questions are presented. Followed by a section about the implications of the study. Lastly, the limitations of the study are discussed and recommendations for future research are suggested.

6.1 Conclusion

This study has set out to answer three research questions regarding employee driven innovation, with an added focus on sustainability and eco-innovation. To answer these research questions a multiple case study of four innovative organizations who all were concerned with smart electricity control and electric vehicle charging was chosen. Qualitative data have been collected through the use of semi-structured interviews, which have then been analyzed to answer all the research questions.

In regard to the study's first research question "*Do the organizations consider their employees to be a valuable source of innovation*?" it was uncovered that all the case organizations viewed their employees as valuable innovation sources, which coincided with previous research on innovation sources (e.g. Demircioğlu et al., 2019; Kesting & Ulhøi, 2010; Høyrup, 2010; Høyrup, 2020, p. 48). It has also been found that the most common way for the employees to participate is through bottom-up incentives, however, the possible top-down influence has also been discussed.

In accordance to the second research question "*What factors do the organizations use, and do these factors yield results in the form of employees contributing to the innovation work*?" it has been uncovered that all of the case organizations utilize all of the factors in their organization, namely innovative culture, autonomy, communication openness, reward fairness and failure tolerance. Based on the findings and previous theory the influence these factors have on the case organizations have been presented, were all of the organizations had reported a high level of employee contribution. The relationship between the factors and how they influence each other has also been discussed.

In regard to the third research question "*How does eco-innovation affect the intention and motivation of employees to participate in employee driven innovation activities*?" it was found that eco-innovation has a positive effect on the employees' intention and motivation to participate in innovation activities. The study confirms the findings of (Rohrbeck & Linneberg, 2019) on how the employees own environmental initiative and concerns lead them to want to contribute to eco-innovation in their workplace. The existence of a "green" culture that further motivates and directs the employees was also discussed. Furthermore, underlying Li et al. (2021)´s research, the findings indicate that a high focus on CSR activities leads to increased employee driven eco-innovation.

Lastly, this study has presented prepositions and recommendations for managers and organizations who want to increase their employees' involvement in innovation. It was recommended to focus and implement the factors of the study, as well as increasing CSR activities and eco-innovation if the organization is focusing on eco-innovation and want employees to participate in eco-innovation.

6.2 Contributions

This study is an addition to the literature on employee driven innovation and eco-innovation. There is not a lot of previous studies (at least not as we could find) on employee driven innovation in Norway. This study gives a nuanced picture of employee innovation activity in a fairly new market. Furthermore, this study has combined multiple theories from the literature of employee driven innovation into one theoretical framework and been able to verify these theories. The study also offers recommendations for increased employee driven innovation, based on the findings (see subsection 5.4), which can be implemented in practice. This study also contributes to the field of eco-innovation, which has a growing interest. It confirms and builds upon Buhl et al. (2016) who requested research that investigate whether a personal sustainability orientation of employees also leads to a more resourceful innovation behavior. The study show how increased eco-innovation can motivate the employees to participate in innovative activities, hence, offer valuable insights for managers and policy makers wanting to increase employee driven eco-innovation.

6.3 Limitations and further research

It must be emphasized that employee driven innovation is a broad concept that can be influenced in a variety of ways. The aim of this study was to examine how the outlined factors and eco-innovation affected employee driven innovation. To explore the full causal relationship between an organization and employee driven innovation is beyond and beside the scope of this study. However, we do understand that there might be other factors and variables affecting EDI, and that there might be other aspects of the factors at play that we have used that we have not considered.

As mentioned in the methodology chapter, this study facilitates conditions for making theoretical generalizations. This implies that the inference about the specific factors about how to involve employees in the innovation work could be used to understand and evaluate other organizations with the same characteristics. However, due to the small sample size there are no conditions for making statistical generalizations about these factors and their effect on other organizations. Nevertheless, findings from the study could provide indications, as well as be transferred to other organizations with similar characteristics.

Due to the nature of the study and time limitations it was not possible to examine the degree of influence the factors had, or how it would affect the organization’s employee driven innovation activities if one or more was missing or at a lower degree. We would recommend this for further research on employee driven innovation. There is a lot of research on the different factors effect on employee driven innovation on their own, or with other factors. A quantitative study that combined all of these factors would be very interesting, and could possibly uncover which factors are most relevant, which might not be as relevant and which factors might be correlated.

It would also be interesting to see the results from a study on employee driven innovation where action research was utilized as a method. The factors could then be introduced into an organization, and any changes in employees' innovative activity could be studied. This could reveal how fast or slow the factors yield results, and the magnitudes of these results.

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8. Appendix

Appendix 1: Interview guide

Introduksjon (fortelle generelt om prosjekt, deres rettigheter og signere skjema fra NSD)

1. Navn
2. Hvilken utdanning har du?
3. Hva er din rolle her hos (org. Navn)?
4. Hvor lenge har du jobbet her?
5. Har rollen din endret seg i løpet av tiden din her?

Kilder til innovasjon (definer hva som anses som innovasjon)

6. Anser du (org.navn) som ett innovativt selskap?
7. Hva anser du som (org.navn)s viktigste innovasjons kilder
8. Hvorfor anser du disse som viktige innovasjonskilder?
9. Hva anser du som (org.navn)s største fordeler når det kommer til innovasjon?
10. Hvorvidt føler du du kan bidra i innovasjonsarbeidet?
11. Hvorvidt føles som at organisasjonen er åpen for dine innslag?

Medarbeiderdreven innovasjon (Definere hva medarbeiderdreven innovasjon er)

12. Har dere hatt mye medarbeider dreven innovasjon her?
    a. Hvor lett tror du det er for en ansatt å komme frem med sine ideer?
13. Har dere noen programmer eller insentiver for medarbeiderdreven innovasjon?
14. Hvis jeg hadde vært en tilfeldig ansatt her og fått en ide, hvordan kunne jeg da gått frem med denne?
15. I hvilken grad vil en være involvert videre hvis en har en god ide?
16. Har dere noen programmer for ansatte for å få dem med i innovasjonsarbeidet?

Faktorene

17. Hvordan er arbeidsmiljøet her?
18. Hvordan er strukturen her?
19. Hvordan vil du beskrive kulturen her?
    a. Hvis du skulle forklart kulturen med 3 ord, hva ville de vært?
20. Er innovasjon en del av kulturen her?
    a. På hvilken måte?
21. Hvor forpliktet føler du deg til å bidra i innovasjonsarbeidet til organisasjonen og dens videreutvikling?
    a. føler du kulturen i organisasjonen gjør at du i større grad føler deg motivert til å bidra i innovasjonsarbeidet?

22. Hvor stor grad av autonomi har de ansatte her?
23. Hvor åpent føler du det er for å kommunisere fritt her, både med medarbeidere og ledere?
    a. Hvor enkelt føler du det er for ansatte å snakke med deg/sin sjef?
24. Hvordan er kommunikasjonen mellom avdelingene?
25. Hvor stor takhøyde vil du si det er for å gjøre feil her?
    a. Hvis noen prøver noe nytt, så fungerer det ikke, hvilke eventuelle konsekvenser vil dette ha?
    b. Er det ansett som greit å gjøre feil?
    c. Er dette noe som er kjent blant de ansatte?
26. Har dere gjort feil i innovasjons arbeid deres?
    a. Hvordan håndterer dere dette?
    b. Har feil resultert i at dere blir mer reservert mot å prøve nye ting?
27. I hvor stor grad føler du du får tilbakemelding på ting som er bra, evnt. dårlig?
28. Har dere noe form for belønningssystemer for innovasjon eller ideer?
    a. Hva får man hvis man er en vanlig ansatt og bidrar i innovasjonsarbeidet?
    b. (hvis de får noe) hvordan blir disse godene/belønningene utdelt?
    c. Føler du denne fordelingen er rettferdig?
    d. Tror du de andre ansatte deler din mening?

Øko-innovasjon (definere øko-innovasjon)

29. Hvordan arbeider (org.navn) mot det grønne skiftet?
30. Hvor stort fokus har dere på øko-innovasjon?
31. Føler du personlig ett ønske om å bidra mer i innovasjonsarbeidet når det dreier seg om det grønne skiftet og øko-innovasjon?
    a. Hvis ja, på hvilken måte da?
    b. Hvis ja, i hvor stor grad påvirker dette deg?
32. Tror du dette gjelder dine medarbeidere også?
    a. Hvorfor/kan du utdype?

Avsluttende

33. Har du noe du vil legge til om medarbeiderdreven innovasjon?
34. Har du noe du vil legge til om øko-innovasjon?

Appendix 2 : Approval from NSD

Meldeskjema / Masteroppgave - Medarbeider dreven innovasjon / Vurdering

Vurdering

Referansenummer
718569

Prosjekttittel
Masteroppgave - Medarbeider dreven innovasjon

Behandlingsansvarlig institusjon
Høgskulen på Vestlandet / Fakultet for økonomi og samfunnsvitskap / Institutt for samfunnsvitskap

Prosjektperiode
03.01.2022 - 13.06.2022

Meldeskjema

Dato
26.01.2022

Type
Standard

Kommentar
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 med vedlegg den 26.1.2022, samt i meldingsdialogen mellom innmelder og Personverntjenester. Behandlingen kan starte.

DEL PROSJEKTET MED PROSJEKTANSVARLIG
Det er obligatorisk for studenter å dele meldeskjemaet med prosjektansvarlig (veileder). Det gjøres ved å trykke på "Del prosjekt" i meldeskjemaet. Om prosjektansvarlig ikke svarer på invitasjonen innen en uke må han/hun inviteres på nytt.

TYPE OPPLYSNINGER OG VARIGHET
Prosjektet vil behandle alminnelige kategorier av personopplysninger frem til 13.6.2022.

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

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

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
Personverntjenester 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).

OneDrive er databehandler i prosjektet. Vi 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.

MELD VESENTLIGE ENDRINGER
Dersom det skjer vesentlige endringer i behandlingen av personopplysninger, kan det være nødvendig å melde dette til oss 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://www.nsd.no/personverntjenester/fylle-ut-meldeskjema-for-personopplysninger/melde-endringer-i-meldeskjema Du må vente på svar fra oss før endringen gjennomføres.

OPPFØLGING AV PROSJEKTET
Personverntjenester vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Kontaktperson hos oss: Lisa Lie Bjordal
Lykke til med prosjektet!

Appendix 3: Information letter and consent form

Vil du delta i forskningsprosjektet
Masteroppgave - innovasjon

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å kartlegge innovasjonsarbeid i organisasjonen I dette skrivet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

Formål
Formålet med denne undersøkelsen er å kartlegge hvordan organisasjonen arbeider med innovasjon. Vi ønsker også å se hvordan organisasjonen omstiller seg i henholdt til det grønne skifte, og hvordan dette påvirker innovasjonsgraden.

Hvem er ansvarlig for forskningsprosjektet?
Høgskulen på Vestlandet er ansvarlig for prosjektet.

Hvorfor får du spørsmål om å delta?
Du har blitt bedt om å delta da vi ønsker å høre fra flere ulike ansatte i bedriften, med ulike roller og synspunkter/perspektiver for å få ett rikere innsyn i organisasjonen.
Hva innebærer det for deg å delta?
Hvis du velger å delta innebærer dette et intervju som tar ca 45min, hvor vi vil spør om din rolle innad i organisasjonen, hvordan du opplever din rolle i organisasjonen, din eventuelle påvirkning på innovasjonsarbeid, og hvordan du opplever organisasjonens arbeid innenfor innovasjon.

Dette intervjuet vil bli tatt opp og anonymisert, du kan trekke deg uavhengig av tidspunkt. Det er kun vi som vil behandle dataene som har blitt gitt og innhentet. Dataene som blir innhentet vil bli slettet etter prosjektets gjennomføring.

Det er frivillig å delta
Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykket tilbake uten å oppgi noen grunn. Alle dine personopplysninger vil da bli slettet. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger
Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket.

- Det er kun vi og veileder som vil ha tilgang til dataene dine
- Dataene dine vil bli trygt forvaltet mellom overnevnte slik at det ikke blir negative konsekvenser av deltakelse i prosjektet. Ingen andre vil få tilgang til disse dataene.
- Alle deltakerne og involverte vil bli anonymisert.
- Databehandlerne er Anne Grete Lilleland, (tlf: 99373587) og Willy Olav Eike (tlf: 92295253), ta kontakt for spørsmål om databehandlingen o.l.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?
Opplysningene anonymiseres fortløpende og sletter når prosjektet avsluttes/oppgaven er godkjent, noe som etter planen er juli 2022.

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

- innsyn i hvilke personopplysninger som er registrert om deg, og å få utlevert en kopi av opplysningene,
- å få rettet personopplysninger om deg,
- å få slettet personopplysninger om deg, og
- å sende klage til Datatilsynet om behandlingen av dine personopplysninger.

Hva gir oss rett til å behandle personopplysninger om deg?
Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra Høgskulen på Vestlandet har NSD – Norsk senter for forskningsdata AS vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Hvor kan jeg finne ut mer?
Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:

- Høgskulen på Vestlandet ved Maryna Zhuravlyova Solesvik, (tlf: +47 52 70 26 96).
- Anne Grete Lilleland, (tlf: 99373587) og Willy Olav Eike (tlf: 92295253),
- Vårt personvernombud: Trine Anikken Larsen, (tlf: +47 55 58 76 82)

Hvis du har spørsmål knyttet til NSD sin vurdering av prosjektet, kan du ta kontakt med:

- NSD – Norsk senter for forskningsdata AS på epost (personverntjenester@nsd.no) eller på telefon: 55 58 21 17.

Med vennlig hilsen

Maryna Zhuravlyova Solesvik
(Professor/veileder)

Anne Grete Lilleland og Willy Olav Eike
(Studenter)

Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet *Masteroppgave i innovasjon*, og har fått anledning til å stille spørsmål. Jeg samtykker til:

- ☐ å delta i intervju.
- ☐ at jeg fått informasjon om hvordan dataene mine blir behandlet.

Jeg samtykker til at mine opplysninger behandles frem til prosjektet er avsluttet

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(Signert av prosjektdeltaker, dato)