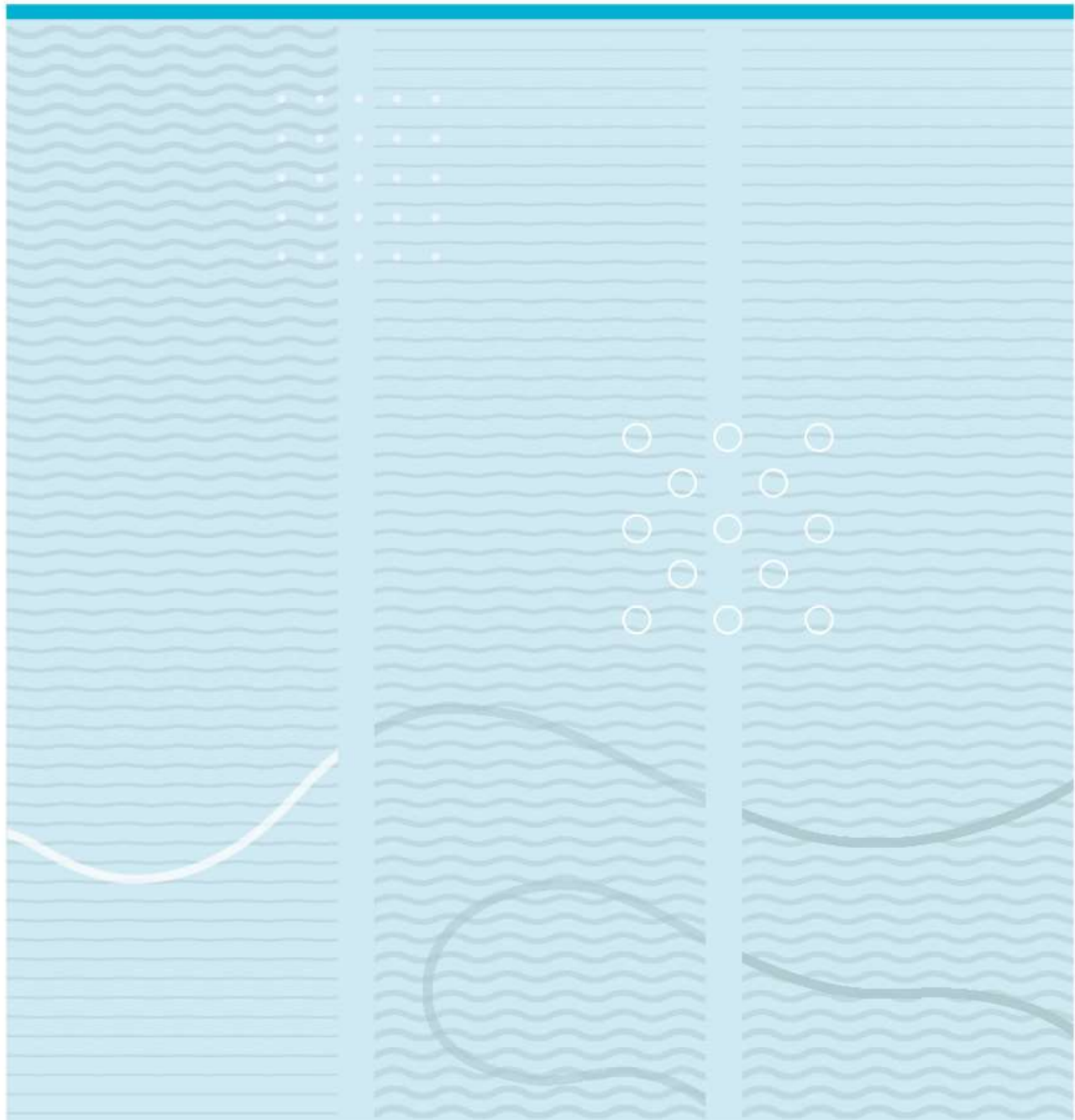Jørgen Ness & Martin Østby

Organizational learning and telecommuting during the COVID-19 pandemic

A qualitative study of employees' telecommuting experiences

This thesis is worth 30 study points

Abstract

The purpose of this master thesis is to illuminate how the learning processes regarding the working method of telecommuting has been impacted by the COVID-19 pandemic in the period between March 2020 and February 2021. This is relevant considering the drastic impact restrictions caused by the COVID-19 pandemic has had on work organization. The novelty of crisis-driven telecommuting means that existing literature about the aforesaid topics are isolated from each other and lacks intra-connection, although we expect new interest to occur. The theoretical background of the thesis consists of an overview of literature on telecommuting and organizational learning during crises. The theoretical background for organizational crisis learning shows that crises can accelerate organizational learning by breaking down existing beliefs and norms. The literature examined on telecommuting addressed struggles regarding social connectivity to work, family life and home environment, however, in general job satisfaction and productivity tends to be positively considered. We use a single case study to examine a Norwegian subsea company. The sample (N=14) consist of both regular employees and HR-personnel, which provided insights into their experiences of using telecommuting in the given period, and how it has affected them individually as well as the company as a whole. The study has been designed to target employees' own thoughts, reflections, and experiences regarding the effects of telecommuting. The results of the study demonstrates that there has been a large impact on the learning on telecommuting, and it seems likely that this will have an impact on future work organization and working methods within the examined company. The results are presented by looking at the organizational learning related to telecommuting within the case company, similarities and contrasts between our findings and the existing literature, and how telecommuting can be implemented as a working method post-crisis. We also highlight further research opportunities to examine these same mechanisms in a more varied collection of companies and contexts, as the study is limited by the inherent disadvantages of conducting a single case study.

Acknowledgments

This master thesis marks the end of our time at the University of South-Eastern Norway. Our last year as students has been different from what we anticipated, due to the COVID-19 pandemic leading to heavy restrictions for students. We would like to thank our supervisor associate professor David Guttormsen for invaluable advice throughout the entire research process. We will fondly remember the discussions on how to best carry out our research. Additionally, we would like to thank our case company and their employees for their participation, and especially the employee who got us in touch with the participants. Despite the unusual circumstances, the informants were reflective and helpful, and without them this study would not have been possible. Finally, we would like to thank our friends and family who have helped in different ways throughout the last year.

Kongsberg, May 2021

_____   _____

       Jørgen Ness   Martin Østby

Contents

1 Introduction

In this chapter, we present the main themes of the thesis, followed by a review of how and why these themes are relevant. After the introduction of our research question, we will also present our research objectives, as well as a summary about the data collection process. The chapter is then closed by outlining the structure of the thesis.

1.1 Background

Towards the end of 2019, alarms were set off around the world with the detection of a new respiratory disease in Wuhan, China. Just a year later, the virus causing this disease, COVID-19 has inflicted massive losses with over 3 million deaths worldwide. In addition to the death tolls, companies around the world have also been hit hard due to heavy restrictions on traveling and work organization. However, these same restrictions have also caused acceleration in the adoption and utilization of new working methods.

One of the defining characteristics of crises are that they typically challenge the pre-existing beliefs and established norms of an organization. This has the potential to lead to an increase in organizational learning (Wang, 2008). The COVID-19 crisis has led to drastic changes within organizations, and both governmental restrictions as well as more intra-organizational measures has led to a rapid increase in the use of new working methods utilizing digital tools.

One of the primary changes to working methods is widespread utilization of telecommuting. Telecommuting is defined by Allen, Golden and Shockley (2015) as "a work practice that involves members of an organization substituting a portion of their typical work hours (ranging from a few hours per week to nearly full-time) to work away from a central workplace—typically principally from home—using technology to interact with others as needed to conduct work tasks" (p. 5). This working method has been heavily aided by various digital tools such as Skype, Microsoft Teams and Zoom. This is substantiated by a significant increase in daily active users for Microsoft Teams. Throughout the period between March 2019 and April 2020, daily active users have more than doubled, from 32 million to 75 million users (Liu, 2020).

While the adaptations witnessed during crises are often driven by necessity, the learning and knowledge accumulated during these times of distress can often increase organizational performance post-crisis. Therefore, seeking to understand and reproduce the processes happening during these specific situations is of great interest to modern companies, driven by rapid changes in the organizations' external environment. Because of this, organizational learning accumulated during crises reflects an area of high relevance in organizational research.

To illuminate these aspects of the COVID-19 pandemic a theoretical fundament consisting of two main topics has been established: telecommuting and organizational crisis learning. The existing literature on telecommuting is brief and limited, and generally assumed that telecommuting is optional rather than mandatory. Articles such as Allen, Golden and Shockley (2015), Heng, Hooi, Liang, Othma and San (2012), Bélanger (1999), and Rupietta and Beckmann (2018) barely considers a mandatory perspective at all, and when mentioned they state that *"...employers should offer their employees working from home but let them decide whether they prefer to work from home or choose to stay in the office"* (Rupietta and Beckmann, 2018, p. 50). This creates a clear distinction between the context of existing literature, and the current context where telecommuting has become mandatory. Theory on organizational crisis learning is further developed, but still has challenges related to lack of commonly accepted definitions as well as interdisciplinary connection.

The existing literature on the topics has not previously connected telecommuting and organizational crisis learning, as there has not been a natural connection to make before March 2020. However, with telecommuting being the modus operandi for organizations across different industries worldwide for large parts of 2020 and 2021 this has created a gap in existing literature. As this is a new way to operate for many companies, examining the learning processes in conjunction with telecommuting is highly relevant both from a theoretical and practical perspective.

1.2 Research question

Based on the situation outlined in the previous sub-section as well as our motivation for writing this thesis–our research question is as follows:

"How has the COVID-19 pandemic impacted organizational learning on telecommuting?"

1.3 Purpose and objectives

The purpose for this thesis is to investigate how learning processes are impacted by crisis situations. More specifically, we are interested in the learning processes linked to telecommuting in a Norwegian company. There are several reasons why this is relevant to the discussion within organizational learning during crises. First, the COVID-19 pandemic is unusual in the way it has affected a wide array of companies across various geographic areas and industries. Second, there is little existing literature examining the overlap between organizational crisis learning and telecommuting. Third, with the extensive use of telecommuting during the COVID-19 pandemic, there is renewed interest in the topic, creating a demand for research on telecommuting, as well as how it has been influenced by the unique circumstances seen during 2020 and 2021.

To further support the research question, the following research objectives are proposed:

1. To illuminate concrete learning points in the field of telecommuting between March 2020 and February 2021.

2. To better understand the differences in organizational learning regarding telecommuting between different demographics, primarily age.

3. To examine how the findings from our case contrast or align with existing literature on telecommuting.

4. To assess the effect of telecommuting on organizational performance as experienced by informants.

5. To propose recommendations on the future feasibility of continued utilization of telecommuting, based on the learning processes within the company.

1.4 Data collection and methodology

We chose to utilize a single case study as our methodical base. The thesis employed a qualitative case design examining a Norwegian subsea company. Data was collected through one-on-one in-depth interviews with 14 company employees. Interviews were conducted and recorded, and the recordings were transcribed and coded. A further overview of the data collection process is outlined in Chapter 3.

1.5 **Outline**

In the following chapter, we give a broad overview of the existing literature within the fields of organizational crisis learning and telecommuting. Chapter 3 presents the methodological approach to data collection and analysis, as well as elaborating on the context of our case organization. In Chapter 4, we present the data collected, while Chapter 5 contains our analysis of said data. Finally, Chapter 6 provides a summary of our findings, proposed contributions, implications, limitations, in addition to propositions for future research.
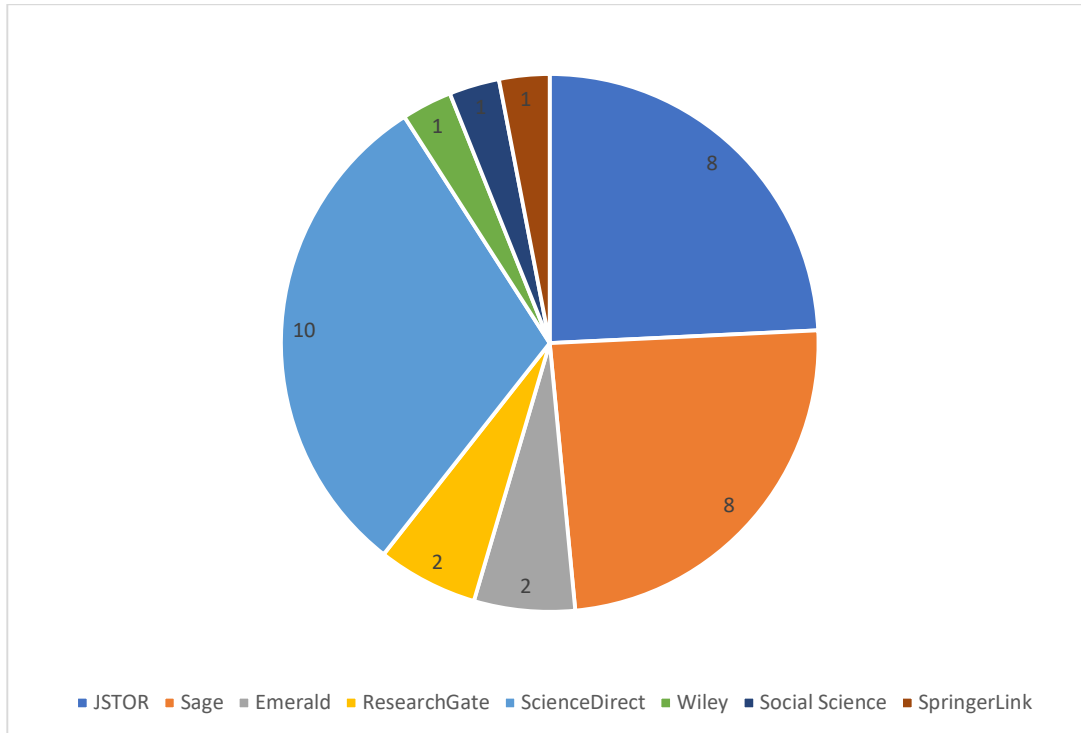
2 Literature review

This chapter will present the theoretical background for our study and is partially based on the literature review conducted through the preliminary project for the master's thesis. We commence the chapter by giving an overview of the approach to collect relevant information, followed by reviewing existing literature on organizational learning in a crisis context, before ultimately, the existing literature on telecommuting is addressed and reviewed.

The reason for examining the two topics chosen, organizational crisis learning and telecommuting, is to gain a theoretical insight that helps create a basis for exploring our research question and to support our arguments, findings, and evidence-based recommendations. On one hand, organizational learning is an integral part of the research question, not only for illuminating what has happened during the pandemic, but also how these events will shape the organization going forward. Linking organizational learning to crises allows for more transferability to the current situation. On the other hand, telecommuting is the most influential change of working methods during the pandemic, and therefore is expected to be relevant to the findings of this study.

2.1 Literature search

This section will outline our approach to finding relevant literature. The searches were not made in specific individual databases, but rather primarily through search services aggregating results from different databases, including Oria and Google Scholar. This allowed us to search simultaneously in several databases, including JSTOR, Web of Science, Sage and ScienceDirect. The number of articles used from different databases are outlined in table Figure 1, while a more in-depth summary table is found as appendix 1. Articles were selected or discarded based on title and abstract.

Figure 1: Articles by database

While we wanted to examine existing literature relevant to organizational crisis learning and telecommuting, we discovered early in the research process that there was no existing literature examining both topics holistically. We therefore decided that the most optimal strategy would be to examine the two topics separately. As a natural consequence of this we ended up using two main searches, one for telecommuting and one for organizational crisis learning. The two main searches are shown in below. We used search operators primarily "AND" and "OR" to make sure synonyms were not excluded. The "AND" search operator adds additional terms to the search, while the "OR" operator adds alternative terms.

Main search 1 (Telecommuting):
Telecommuting OR telecommute OR remote work OR telework OR teleworking OR virtual work AND business OR organization OR organisation.

Main Search 2 (Organizational crisis learning):
Organizational learning AND event OR events OR crisis OR crises OR disaster OR disasters.

As there has been a considerable amount of new literature during the research process, especially on the topic of telecommuting, the searches were repeated throughout the research process. These new searches were limited to articles created after the onset of the COVID-19 pandemic and included new keywords such as "Pandemic" and "COVID-19".

The relatively sparse amount of existing literature on telecommuting did not permit much differentiation in selection of articles, and as such a low number of articles were excluded. The final theoretical overview consisted of 33 of the most relevant articles found (see figure 1 and appendix 1). Additional searches did not return articles examining the combination of telecommuting and crisis situations or telecommuting and organizational learning, implicating that little crossover between the different topics exist. However, it can be reasonably assumed that further interest in the topic of telecommuting might also lead to greater interest in conjunction with other topics.

Organizational crisis learning however, is a far broader field. This is further confounded by the fact that there is a high degree of interconnectivity between crisis and organizational learning as separate topics. Because of this, viewing organizational crisis learning as a separate holistic field was not feasible, and influential literature within crises and organizational learning had to be drawn upon.

2.2 Organizational crisis learning

The following section gives an overview on the reviewed literature within organizational crisis learning, including delving into the broader theoretical framework of crisis and organizational learning theory.

2.2.1 Crises and organizational learning

In this section, the organizational learning during the COVID-19 pandemic will be examined through the lens of existing literature. While there has been little to no empirical research on organizational learning during the COVID-19 pandemic outside specific fields such as health care and education due to its novelty, it is still strongly linked to well-established topics within business literature, most notably crisis management. The COVID-19 pandemic has frequently been referred to as a crisis, and in the loose, everyday speech view of what a crisis is there is no doubt that the word is applicable.

However, whether the COVID-19 has caused organizational crises is a question that is more up for debate, where close examination of characteristics and definitions may be impactful.

One of the most used definition of crisis within the management discipline is Pearson and Clair's (1998): "An organizational crisis is a low probability, high-impact event that threatens the viability of the organization and is characterized by ambiguity of cause, effect, and means of resolution, as well as by a belief that decisions must be made swiftly" (p. 60). This definition lists up typical characteristics of an organizational crisis, where the main trends are that crises are rare albeit serious, have an unclear origin and solution, and are highly time sensitive.

Another approach to defining an organizational crisis is Bundy, Pfarrer, Short, Cole, and Comb's (2016): "An event perceived by managers and stakeholders to be highly salient, unexpected, and potentially disruptive" (p. 1662). In addition to this, they add four key characteristics: 1) Crises lead to "uncertainty, disruption and change", 2) Crises are harmful or threatening for organizations as well as their stakeholders, 3) Crises are behavioral phenomena, 4) Crises are part of larger processes, as opposed to discrete events.

While the two definitions are similar, there are distinctions between them. This is especially apparent in the third characteristic outlined by Bundy et al., that crises are behavioral phenomena. This in practice means that according to this definition, a crisis can occur without a triggering event, and specific threatening events can occur without it being a crisis. It is not a critical event defining the crisis, it is rather the subjective reactions from a behavioral viewpoint that makes a crisis a crisis. This subjectivity is less pronounced in in Pearson and Clair's (1998) definition, which only states that there is a "belief that actions must be taken quickly" (p. 60).

Some researchers choose to use different definitions for events that share many traits with what would typically be considered a crisis. For instance, Faulkner (2001) distinguishes between the terms crisis and disaster. Faulkner argues that a distinction should be made between the two, where a crisis is self-inflicted to some degree, while a disaster is caused by external events a company has little to no control over. Moreover, it is relevant to mention that Faulkner (2001) was looking primarily at tourism organizations, which have historically been hit especially hard by what he refers to as "disasters".

However, Faulkner's (2001) view has not seen mainstream usage among researchers. Presumably, this is because the terms as defined often overlap, and the lines between them quickly become blurry. For instance, if a disaster (as defined by Faulkner) occurs, and an organization responds sub-optimally leading to an unnecessarily high impact, is that a crisis, a disaster, or both? In a topic, which often struggles with finding common ground, such confusion is best avoided, and therefore this terminology seems to mostly stay within tourism-literature, where such a distinction is arguably more important.

Faulkner (2001) is not the only author presenting alternative terms for crisis-like situations. Lampel, Shamsie and Shapira (2009) use the term "rare events" about events often seen within the crisis literature, including the Challenger disaster of 1986. This is a more all-encompassing term that involves any event that departs from the usual experiences and day-to-day organizational life of a company. With this definition, what categorizes a rare event becomes a subjective question, varying from organization to organization and from market to market. This is similar to Bundy et al.'s (2016) definition in which crises are viewed as behavioral phenomena.

Based on the information above, the COVID-19 pandemic can be viewed as both a crisis, a rare event, and a disaster. While there are differences among the literature on the different topics, when considering organizational learning these differences become so subtle that they are far smaller than the variation between specific authors and perspectives. For this reason, COVID-19 can be viewed as an organizational crisis, especially because the research on this topic is far more comprehensive than the literature on events and disasters. For this study, Pearson and Clair's definition of "crisis" will be used.

2.2.2 Organizational learning during crisis

"Never waste a good crisis". This quote, often attributed to Winston Churchill exemplifies the understanding that crises can act as catalysts for change. This view has also been prominent in business literature for many decades, though it has evolved over the years. Organizational learning, and maybe especially organizational learning linked to crisis situations, is a topic that has gotten

increasing relevance over the last decades. It is now thought to be not only a source of competitive advantages, but a necessity for organizational survival (Wang, 2008).

There are several different definitions on what constitutes organizational learning. Kuchinke (1995) defines organizational learning as "a fundamental mechanism by which organizations, as open systems, interact with their environment, process information, and adapt to changing external and internal conditions." (p. 308). While broad, this definition also includes several key factors distinguishing learning from other factors.

An even more broad definition of learning is presented by Huber (1991), who states that "An entity learns if, through its processing of information, the range of its potential behaviors is changed" (p. 89). Huber (1991) goes on to link this to organizational learning, further narrowing the definition for organizational learning to that "an organization learns if any of its units acquires knowledge that it recognizes as potentially useful to the organization" (p. 89).

Bundy et al. (2016) divide crisis management into two distinct perspectives; internal and external. They then further divide into three stages: pre-crisis prevention, crisis management, and post-crisis outcomes. Their view is that the post-crisis internal outcome can be summed up by the term organizational learning, explicitly linking the two fields. It could be argued that their perception of organizational crisis learning differs somewhat from other researchers, as many would consider organizational crisis learning not only an outcome, but also a key process occurring not only after, but also during and before a crisis.

A key characteristic linking organizational learning to crisis handling is the fact that as noted by Levitt and March (1988) actions are linked to interpretation of past events. This in turn means that unless new events can break down these existing interpretations, there will be a resistance to new learning occurring. This connection is commonly mentioned in research articles, such as Wang (2008), who states that:

> *Experiencing a crisis tends to change the way people think and challenges their beliefs and perceptions about the social and physical environment, as well as the adequacy of existing organizational structures and procedures that are designed to cope with the environment (p. 434).*

This means that the capability of crises to challenge existing beliefs makes it well suited for increasing organizational learning.

Haunschild and Sullivan (2002) discovered that the degree of organizational learning is affected by the type of crisis faced. Through examining accidents and incidents in the US. airline industry, they discovered that crises with heterogeneous causes led to more organizational learning than crises with homogenous causes. The reasoning for this, they argued, is that homogenous causal effects could potentially make organizations simplify the crisis down to factors such as bad individual performance or simply being unlucky.

Smith (2002) draws upon Argyris' (1977) categorization of single-loop and double-loop learning and renames the terms first-order and second-order learning. First-order or single-loop learning refers to superficial changes to an organization viewpoints and beliefs. Second-order or double-loop learning on the other hand, refers to learning which challenges the core beliefs within an organization (Smith and Elliott, 2007). According to Argyris, a double-loop learning process will have a larger, more positive, and longer lasting impact on the organization.

March (1991) divides organizational learning into two key processes: exploration and exploitation. Exploration is the assimilation of learning, while exploitation is being able to transfer this learning into changes that will improve the organization in one way or another. According to March, organizations must make a tradeoff when considering whether they should focus on discovering new knowledge or putting the knowledge already accumulated into use.

When examining the results of exploration and exploitation strategies during a financial crisis in Russia, Osiyevskyy, Shirokova and Ritala (2020) found some somewhat surprising results. They discovered that focusing on exploitation led to a stable but lowered organizational performance. However, focusing on exploration led to increased performance at the cost of higher instability. Osiyevskyy et al. does not however account for the possibility of focusing on balancing, which could be reasonably assumed to be more in line with the reality of the topic. There might additionally be cultural factors that account for some of these results that might not transfer to other countries outside the CIS-countries, factors Osiyevskyy et al. do not discuss.

2.2.3 Challenges to organizational learning

In some of the early work within the discipline of crisis management, the belief that a company's handling of a crisis will lead to organizational learning is viewed as a given. For instance, in Turner's (1976) article the view that when a crisis has subsided, the organization will have learnt their lessons and be better prepared for the future is subtly present throughout the article. Over the last 30 years, as successful outcomes have become better understood, there has been a clear shift in view. From Turner's view that organizational learning after a crisis is a given, to the view that organizational learning can occur in the right circumstances, and with the right organizational approach. An important milestone within this transition is Elliott and Smith (1993), where it was argued that despite a string of crises regarding audience safety on English football grounds there was still no concrete changes, suggesting that there was a low degree of learning despite the occurrence of crisis situations, and thus, dismissing the idea that learning is bound to occur during crises.

This view was also somewhat reflected by Pearson and Clair (1998). Here, it was acknowledged that one of the success factors for good crisis management is being able to not only learn from a crisis event, but also to convert this learning into effective changes within the organization. In other words, successful crisis handling requires both exploration and exploitation. While this might seem obvious, it is in clear contrast to earlier works such as Turner where there was an underlying assumption that organizational learning will occur no matter what, given that an organizational crisis occurs.

A more in depth look at challenges standing between an organization and successfully learning during and after a crisis is found in Smith and Elliott (2007). In this article, building on the foundation of their previously mentioned 1993 article, they divide crisis learning into three aspects: learning for crisis, learning as crisis, and learning from crisis. Learning for crisis can be summarized as the learning an organization does before a crisis happens. Typically, the challenges for this kind of learning are lack of urgency and motivation compared to a real crisis.

The second type of learning reflected by Smith and Elliott (2007) is "learning as crisis", which is the learning an organization does during a crisis. In this section, they reflect on why crises are good opportunities for learning. In this section, they also indirectly disagree with Faulkner (2001), as they

argue that disasters can trigger crises, exemplifying this with the hurricanes hitting the US in 2005, leading to a financial crisis. This shows that trying to draw a line between disasters and crises often will be futile.

The third and final learning aspect is "learning from crisis". This learning aspect is perhaps the most widely developed and examined perspective within the existing literature and consists of the learning assimilated after a crisis ends or has been handled. As stated by Pearson and Clair (1998), the cause and effects of a crisis are often ambiguous in nature, but Smith and Elliott (2007) point out that they often become clearer in retrospective than before and during the crisis.

Smith and Elliott (2007) then move on to the main theme of the article, namely looking at the barriers standing between organizations and crisis learning. While they warn against hierarchically ranking the issues, the most common issues found in their literature review was ineffective communication and rigidity of core beliefs. This is interesting, as many authors assume one of the key links between crises and organizational learning that established beliefs are broken down. This exemplifies that even though crises have the potential to cause organizational learning, this potential is not always fulfilled.

Smith and Elliott (2007) article show a clear contrast to Bundy et al.'s (2016) view that organizational learning is just an outcome and provides a more holistic approach to organizational crisis learning. This view is shared by Kuchinke (1995) who states that organizational learning is a means to an end, and not an outcome that is favorable in itself. This can be viewed in the context of the exploitation/exploration theory, where just learning itself is not enough, the knowledge also needs to be put in use. This is interesting when examining the effect of the COVID-19 pandemic, as many companies, especially in Norway have been bound by governmental restrictions, meaning many companies did not get a chance to explore new working methods before having to employ them.

Ultimately, while the theoretical viewpoint often has a very black and white viewpoint on what constitutes successful organizational learning, the reality is often more complex. Pearson and Clair (1998) describe successful organizational learning as not an either or-situation, but rather a continuum. The research on the topic often hints at the opposite, but this might be because researchers of case studies are often interested in cases where the company inquisition undoubtedly failed or succeeded.

2.2.4 Discussion on organizational crisis learning

The above information points to several findings regarding organizational learning during crises. 1) Crises are well suited to organizational learning as they generally lead to uncertainty and turbulence. 2) Organizational learning must be geared towards performance. 3) Organizational learning following a crisis might be highly dependent on organizational capacity and should not be taken for granted.

There is also quite a lot of ambiguity in what can be considered a crisis, and opinion on this differs between researchers. This also has implications on the research conclusions. Take for instance Haunschild and Sullivans (2002) research that shows that crises with a heterogeneous background have worse learning outcomes than more complex crises. According to Pearson and Clair's (1998) definition, the so-called "crises" with heterogeneous origin should not even be a crisis, as the complexity itself is part of what makes a crisis a crisis.

Perhaps the largest dissimilarity between the COVID-19 and the crisis definition is the lack of ambiguity surrounding the pandemic. It is quite easy to find cause and effect relationships in the developments surrounding organizations around the world. However, how prepared organizations are for such a large-scale crisis could be reasonably assumed to have a large effect on the impact of the developments in the macroenvironment. This in turn means that it could be argued that the COVID-19 pandemic is not a crisis; it is rather the reactions and preparedness of a given organization that bridges us into crisis management literature.

This distinction, while maybe important from a theoretic perspective, might seem farfetched and unnecessary from a more practical viewpoint. For managers across the world seeing global economic downturns, suppliers on the verge of extinction, and customer bases disappearing overnight, such hairsplitting might seem pointless and unnecessary, as it clearly is a crisis (or disaster) for them.

Similar definition challenges also exist within the field of organizational learning. For instance, there are two quite different perspectives within the literature examined. The first is that organizational learning needs to lead to positive change to be categorized as learning. Organizational learning per definition requires the learning to be positive for it to be defined as organizational learning. The other

view is that organizational learning does not necessarily have to be a positive thing. Organizations can also end up learning the wrong lessons, or the right lessons on the wrong basis (Huber, 1991).

While predicting what wrong lessons can be learned by organizations is bound to be hypothetical and speculative in nature, one potential issue could be underestimating the impact lack of face-to-face contact has for relationship-building when utilizing telecommuting. The reason for this is that the utilization happened with pre-existing relationships, but there might be larger barriers or drawbacks when introducing new people, for instance through hiring new employees. While this is just one example, it is important to be aware of issues such as these.

Much of the literature on organizational learning in crisis management takes a quite narrow view, primarily focusing on the knowledge to avoid and handle future crises. However, there are also examples of researchers putting organizational learning in a broader context, as crises can help organizations unlearn existing patterns that may be suboptimal and/or hinder performance by forcing them to reexamine existing beliefs and norms within the organization itself.

2.3 **Telecommuting**

This section will give an overview of the existing literature on telecommuting. Based on the amount of literature published the past few decades, telecommuting has become increasingly more relevant, parallelly to the growth of communication technologies. Due to the COVID-19 pandemic, we saw an increase in telecommuting as a method of work, including in Norway because of national restrictions implemented in March 2020. Globally, this is exemplified by an increase in use of team-coordinating platforms such as Microsoft Teams, where daily active users doubled in the months between March 2019 and April 2020 globally, and both March and April of 2020 were the months with the greatest growth (Liu, 2020). Microsoft Teams users went from 32 million to 75 million during this period of 13 months (Liu, 2020). Correspondingly, Dingel and Neiman (2020) predict that 37% of jobs in the US may be completely executed while working from home, and additionally state that these jobs account for 46% of all US wages, clearly displaying a gap in pay among jobs where telecommuting is appropriate and jobs based on a traditional working environment (Dingel and Neiman, 2020).

Initially, we aimed to uncover an explanatory definition for our usage of "telecommuting" within this paper. This however turned out to be challenging. According to Allen, Golden and Shockley (2015) there is "a significant challenge…" (p. 42) when reviewing research due to the variations of definitions used to define telecommuting in already existing research (Allen et al., 2015; Harpaz, 2002). Allen et al. (2015) further state that a "lack of a commonly accepted definition…" (p. 44) is generally obstructing their understanding of this type of work, due to dissimilarities in current research making studies hard to compare. Since research generally uses different definitions for the same term, "telecommuting", we have decided to base our definition within this thesis in Allen et al.'s (2015) definition:

Telecommuting - *"Telecommuting is a work practice that involves members of an organization substituting a portion of their typical work hours (ranging from a few hours per week to nearly full-time) to work away from a central workplace—typically principally from home—using technology to interact with others as needed to conduct work tasks"* (Allen et al., 2015, p. 44).

This definition is a composition of several definitions that has been developed through a thorough investigation on the problems of the term's utilization in past research. The main issue with the term is that it had numerous specifications in different studies, making it a difficult term to utilize with clarity across studies, similarly to the issue of defining a crisis as discussed in chapter 2.2. In the development process of this definition Allen et al. (2015) examined said previous definitions, and then developed this definition of interest to include all important aspects. Although, in our case, we refer to a slightly modified version of this definition to include "full-time" practice instead of "nearly full-time" as stated in the definition. We deem this necessary since several of the participants interviewed in this thesis had a full-time practice for several months after the initial lockdown of March 2020.

Workers in most kinds of jobs and situations where the use of telecommuting is appropriate were introduced to or increased their use of this working method, radically changing their normal weekdays. Felstead and Henseke's (2017) findings distinctly suggests that, in general, "the detachment of work from place is a growing trend" (p. 195).

Bélanger (1999) lists several reasons his participants did not want to telecommute. The list includes variations of reasons regarding availability, inappropriate home office environment, being more productive at the office, lack of equipment at home, need to share information and socialize with colleagues (Bélanger, 1999). Although, the article is dated, the reasons for not wanting to telecommute may still be applicable. Two respondents noted that they were *"not willing to carve out a portion of my [their] house for home office"* (Bélanger, 1999, p. 147). While some noted that children at home demand attention and time, making it challenging to work, others emphasized that a significant issue with working from home was the lack of proper equipment, resulting in a less effective workday (Bélanger, 1999).

Kuruzovich, Paczkowski, Golden, Goodarzi, and Venkatesh (2021) supplement the above with their findings indicating that "*extensive use of telecommuting systems negatively impacts social exchange processes and job satisfaction, organizational commitment, and job performance…*", additionally underscoring the limitations of virtual interactions (p. 1). Furthermore, they state that quality software and solutions could decrease this negative effect (Kuruzovich et al., 2021).

A common theme in telecommuting literature is the effect of telecommuting on productivity. Dutcher (2012) focuses primarily on one perspective within this research-branch, asking the question of how telecommuting affects *productivity*. In this study Dutcher categorizes working tasks in two different categories, *dull* and *creative tasks* (Dutcher, 2012). In this study, the objects got the creative task of "finding unusual uses to common objects" (p. 360). This task's purpose is to represent creative tasks across jobs and industries. Additionally, the dull task in the study involved the objects to type in "sets of four randomly generated characters that were a mix of letters and numbers", this design had the objective of mimicking "the work done by data entry personnel" (Dutcher, 2012, p. 356).

According to Dutcher (2012) the results indicate that "telecommuting environmental effects" could have a positive impact on productivity regarding *creative tasks*, simultaneously have negative effects ("implications") on productivity of so-called *dull tasks* (p. 355). Moreover, they found that the out-of-workplace environment reduced productivity in the dull task about 6-10%. Whereas the same out-of-workplace environment raised the productivity of creative tasks by about 11-20% (Dutcher, 2012). However, ultimately, they consider the risk of over-generalization of these results.

Morikawa (2020) found that in Japan, in a survey conducted, the workers indicate that they are on average less productive while working from home, instead of in an office setting. Although, Morikawa states that reasons for this may come down to lack of familiarity with remote access software and may therefore disappear over time. Ultimately, he states that other factors indicate that the productivity difference will persist (Morikawa, 2020).

Furthermore, Cooper and Kurland (2002a) identify *professional isolation* as an important factor that may affect telecommuter's workdays. The term, *professional isolation*, is defined as a situation that arises when telecommuters are "off-site and out-of-site" and therefore miss out on "important organizational rewards" (Cooper and Kurland, 2002a, p. 519). However, discussing whether companies, especially within regions that completely locked down the society, have adapted to or taken measures against professionally isolation of their employees during the COVID-19 pandemic may be critical to further understand the situation. Regarding the importance of physically being at work, Cooper and Kurland (2002a) identifies three types of developmental activities that often happen at the workplace. These three activity types are defined as *interpersonal networking*, *informal learning,* and *mentoring* (Cooper and Kurland, 2002a). Some of these types, if not all, will be greatly reduced when telecommuting over a longer period, further increasing professional isolation.

Additionally, Bartel, Wrzesniewski, and Wiesenfeld (2012) found similar tendencies regarding reduction in perceived respect, as discussed previously. They found that perceived respect is negatively associated with the degree of physical isolation (Bartel et al., 2012). Finally, a seemingly common understanding regarding the challenge of teleworkers generally relating worse to their organization in full-time telecommuting situations emerged in several studies (Bartel et al., 2012; Cooper and Kurland, 2002a; Dahlstrom, 2013). However, Wang, Albert, and Sun's (2020) findings imply that telecommuters may remain with their employers solely due to the perceived advantages of staying in the organization. In this study, respondents describe a preference to save time, emotional energy, and the uncertainty of switching workplaces, in addition to a weakened marketability, rather than remaining in an organization due to their emotional connections to their colleagues or organization (Wang et al., 2020).

To obtain another perspective it may be relevant to examine the literature regarding how telecommuting or working from home impacts employees' effort of work. Rupietta and Beckmann

(2018) have investigated this through empirical data, and they found that, in short, "working from home has a positive influence on employees' work effort." (p. 26). Furthermore, they reveal that working from home has significantly increased *intrinsic motivation*, the motivation to do something without any obvious external reward. Increasing their intrinsic motivation may be directly linked to employees' work effort. Moreover, they also found that the more often employees are telecommuting; parallelly the higher work effort they provide (Rupietta and Beckmann, 2018).

Similarly, to Rupietta and Beckmann's (2018), Heng et al. (2012) also identifies certain benefits with telecommuting according to respondents in a non-profit organization. The respondents were introduced to a telecommuting project in accordance with their work at the non-profit organization in question, where they have in different degrees been utilizing telecommuting as a method of work. 51.3% and 28.2% of respondents strongly agreed or somewhat agreed that the utilization of telecommuting is cost saving, Heng et al. (2012) argues that this may be because the respondents will not need to travel to the office. A second major benefit for telecommuting, according to the respondents of this study, is the time saving aspect, where 41% and 35.9% stated that they strongly agreed or somewhat agreed that telecommuting as a form of work significantly was timesaving (Heng et al., 2012). Additionally, Chakrabarti's (2018) findings suggest that on a normal workday, telecommuting is *"associated with 41% higher odds of walking/bicycling > 1 mile…"* (p. 19), addressing a high degree of physical activity related to the work form of telecommuting.

After comparing and summarizing key advantages, in addition to factors that influence the effectiveness of telecommuting, it may be appropriate to consider the factor of job satisfaction among both experienced and inexperienced telecommuters. As addressed above, this is especially important to take into consideration due to the number of regular workers being forced to work from home due to the COVID-19 pandemic. One of the primary reasons why the relationship between job satisfaction and telecommuting is key, mainly revolves around whether a change of work style is sustainable, which also is indirectly linked to the objective for this study. For example, if most of the employees dislike telecommuting completely, implementing this form of work in other situations where telecommuting is not required will most likely be both difficult and somewhat unnecessary, given that job satisfaction influences work effort of employees (Rupietta and Beckmann, 2018).

In general, there is a significant number of contrasting findings on the topic of telecommuting (Golden and Veiga, 2016). Golden and Veiga (2016) aims to resolve these inconsistent findings on the topic regarding the link between job satisfaction and telecommuting. To resolve this issue, they decided to use a hierarchical regression analysis of samples from 321 professional-level employees as a baseline (Golden and Veiga, 2016). This analysis resulted in findings that suggest a curvilinear relationship between the two variables, *telecommuting* and *job satisfaction* (Golden and Veiga, 2016). In short this means, as the amount of *telecommuting* increases (variable 1), so does *job satisfaction* (variable 2), however only to a certain point, which after this point as telecommuting further increases, job satisfaction decreases correspondingly.

Baruch (2000) took a different approach to the same perspective of telecommuting, while comparing *five kinds of effects* on employees on an individual level. The five kinds are *identity, skills, context, role demands* and *role outcomes* (Baruch, 2000). This study found that employees did not perceive any changes of themselves as employees, as long as the *teleworking* (telecommuting) was balanced by 'standard mode' work (Baruch, 2000, p. 43). Furthermore, time management *skills* were deemed to be vital for the effectiveness of telecommuting, in addition to the ability to keep socializing digitally. Lastly, technical skills were not perceived as an important nor vital factor for effective telecommuting or teleworking. Baruch (2000) further states that although there was a significant difference in situations regarding a normal workday and a telecommuting-based workday, the most noticeable impact of the *context* effect was a lack of general distractions that a normal workplace usually offers. The study found that no specific indications were uncovered for the effect of *role demands*. Ultimately, the effect of *role outcomes* found that managers and professionals perceived greater performance, simply because of the extra work they were able to do since fewer interruptions occurred (Baruch, 2000).

A distinct different take on this topic is the perspective of manager control in telecommuting environments. Kurland and Cooper (2002b) examine this perspective through interviews with "supervisors, telecommuters, and non-telecommuters.". Their findings suggest several challenges for managers and supervisors in these (telecommuting) environments which include "clan strategies". Clan strategies refers to a strategy behind an organization's values and beliefs that *behaves* or operates more like a family, contradictory to a business. The challenges referred to are challenges such as *fostering synergy*, *replicating informal learning*, *creating opportunities for interpersonal networking*, and *professionally developing out-of-sight employees* (Kurland and Cooper, 2002b). According to

Kurland and Cooper (2002b) these challenges directly influence telecommuters' opportunities for growth professionally.

To summarize, researchers on this topic have previously struggled to find a definition of telecommuting widely spread across the research community. Since the objective for this study was to explore telecommuting from a crisis management perspective, we chose to slightly alter the definitions used, to more accurately reflect the case of the COVID-19 pandemic which leaves countless workers stuck at home as a safety procedure. The definition in question primarily centers the utilization of digital tools, such as the internet among other remote work tools.

Throughout our literature review, an examination of several perspectives of telecommuting has been conducted, and we uncovered the different advantages and disadvantages of this form of work. On one hand, we have covered some advantages such as an increase in productivity of *creative tasks*, an increase in employees' work effort and *intrinsic motivation*, in addition respondents who were introduced to telecommuting for the first time mostly agreed that the use of telecommuting was cost-saving and timesaving for them individually (Dutcher, 2012; Rupietta and Beckmann, 2018; Heng et al., 2012). Moreover, Golden and Veiga (2016) uncovers a *curvilinear relationship* between telecommuting and job satisfaction which generally empowers the benefits listed previously, however only to a certain point (Golden and Veiga, 2016).

On the other hand, we also found disadvantages such as a reduction in productivity in so-called *dull tasks*, the lack of organizational rewards for telecommuters working off-site, in addition to several challenges directly influencing telecommuters' opportunities for professional growth (Dutcher, 2012; Kurland and Cooper, 2002a; Kurland and Cooper, 2002b). In addition to reviewing these advantages and disadvantages, Harpaz (2002) also supplements these key consequences of telecommuting with the advantage of reducing environmental damage, saving infrastructure and energy among others. Harpaz (2002) concludes that telecommuting advantages seem to outweigh the disadvantages which again may improve a lifestyle to be more balanced and satisfactory, specifically improving quality of work and, in general, family life (Harpaz, 2002). Although the different situations at home may be influential, Baruch (2000) addresses varied results regarding the influence of children at home. These results indicated that in families where children were not at home, their potential presence was

negatively regarded, however, in families where children were home, their presence was not considered a hindrance at all (Baruch, 2000).

Conclusively, a few main trends within the literature reviewed have unfolded. Initially, some disadvantages or general negative attitudes towards telecommuting include the intervention in the home environment, for instance, as a respondent from Bélanger's (1999) study noted that he/she is *"not willing to carve out a portion of [their] house for home office [practices]"* (p. 147). Additionally, a trend among these types of studies often tend to regard telecommuting or working from home as a negative impact on family life and home environment (Bélanger, 1999; Harpaz, 2002; Baruch, 2000). Secondly, several of the studies examined addresses the difficulties of social interactions and the perception of interconnectivity at work (e.g., Felstead and Henseke, 2017; Bélanger, 1999; Kuruzovich et al, 2021; Cooper and Kurland, 2002a; Bartel et al, 2012; Kurland and Cooper, 2002b). Ultimately, job (situational) satisfaction tends to be generally positive among the research examined (Rupietta and Beckmann, 2018; Heng et al., 2012; Golden and Veiga, 2016; Baruch, 2000). Correspondingly, some studies conclude that the positives outweigh the negatives regarding the general use of telecommuting as a method of work (Heng et al., 2012).

As a side note, as briefly mentioned several times throughout the first two chapters, at the time of doing the main searches for the two topics of question (between August 2020 and February 2021), there was a general lack of research on telecommuting from a 'forced' perspective (mandatory telecommuting). By this, we mean due to restrictions combating the spread of COVID-19 organizations and workers of all sorts were in some way or another 'forced' or ushered to work from home. This led to, as previously stated, numerous workers of both digitally experienced and inexperienced across industries to be affected by digital tools in their everyday life. The potential for learning from this situation is not strictly limited to future pandemics or crisis situations, but also the general optimization of alternative working methods and increasing effectiveness when utilizing digital tools and may therefore be valuable to organizations.

2.4 Chapter conclusion and conceptual model

Based on the theory examined, we expect that the COVID-19 pandemic will have had an impact on organizational learning. The pandemic has undeniably had an impact on the way organizations conduct and organize their work, and we expect that these radical changes have led to at least some

degree of organizational learning. Based on the existing theory on the topic of telecommuting, we expect that the way work largely has been organized since March 2020 has had an impact on social factors, productivity, and job satisfaction within organizations. As much of the research conducted has been on companies where telecommuting has been optional, the impact might be different in our research, as telecommuting in many sectors and industries has become a mandatory practice. The reason for this is primarily government restrictions but may also be affected by inter-organizational practices.
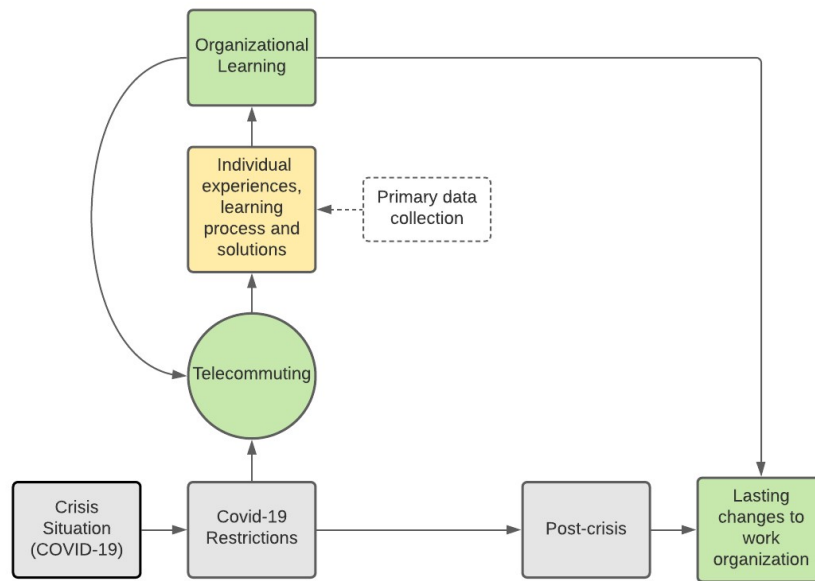
Figure 2: Conceptual model (Single-case study)

Based on the literature examined, we have developed a conceptual model illustrating our area of interest. It shows how a crisis, the COVID-19 pandemic, has led to internal and governmental restrictions, which again has led to widespread use of telecommuting within organizations. It is worth noting that despite there being other consequences from these restrictions, this is not reflected in the model.

The conceptual model also illustrates the data we are interested in collecting, the individual experiences of the employees. This will then be the lens through which we examine the organizational learning process (research question and research objective 1), the impact of telecommuting (research

objective 3), and the future implications this has (research objective 5). In other words, the yellow box illustrates the data that will be collected, and the green boxes illustrate the topics of interest.

3 Methodology and Context

This chapter will present an overview of the research design chosen to examine the topic at hand, as well as the broader context surrounding the case. First, we will present the context in which our thesis is written. After that, the research design of the project will be presented, before ultimately trustworthiness, credibility and ethical considerations will be described.

3.1 Context

The case that has been examined is a Norwegian company operating within the subsea industry, with close connections to the petroleum industry. The company examined had a high degree of specific, advanced competence and white-collar workers. The informants in the study consisted entirely of white-collar workers, as they are the only ones that have been able to utilize telecommuting full-time. Around 70% of the employees within the company are white collar workers.

When utilizing a case study approach being aware of the context of the case is important. The clear connection between context and case is outlined by authors such as Yin (2018) who states that "investigates a contemporary phenomenon (the "case") in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident (p. 45)". This subchapter will briefly introduce the social setting of Norway, as well as the impact COVID-19 has had on the country.

Norway, as well as the rest of the Scandinavian subregion is well known for high social capital, a strong focus on welfare, as well as social democratic principles (Rothstein and Stolle, 2003). This has led to consistent high placements on international quality of life lists, and a strong interest in the "Nordic model" within political and social sciences.

Johanson (2013) mentions factors such as high degrees of trust, pragmatic approach, and flat hierarchies as cornerstones of the Norwegian corporate government systems. These factors have a direct transferability to utilization of telecommuting, that may be so influential that they make or break successful implementation. Take for instance a high level of trust. This can be seen as a prerequisite for successful telecommuting. With low degrees of trust, leadership might not be willing to allow people to work from home, believing that this will lead to opportunistic behavior and a loss of productivity.

Norway, like the rest of the world was closely monitoring the spread of the COVID-19 virus in early 2020, and on March 13th, as a reaction to the virus starting to spread in the country, the country was shut down. This shutdown included temporary measures such as shutting down all education, mandatory quarantines for international travel, and forcing non-essential workers to work from home. Since then, Norway has seen several flare ups of the virus, and in response the governmental measures have varied since then. However, working from home where possible has been a constant throughout the pandemic. This is reflected by our informants working from home close to 100% in the period from March 13th to the interview dates in February 2021.

3.2 Research philosophy

Designing and conducting research is colored and influenced by the researchers' stances and viewpoints, and it is important to be aware of these viewpoints (Johannessen, Tufte and Christoffersen, 2016). An important aspect of this is the philosophical stance of the researcher, as this will influence the choices taken, as well as the interpretation of research data. Reflecting on and acknowledging these philosophical stances can therefore help the researcher understand and explain the choices they make throughout the research process.

Within philosophy, ontology can be thought of as assumptions of mankind and society, whereas epistemology is about the nature of knowledge about the world, "what can we really know about reality?" (Johannessen et al., 2016, p. 36). The ontological stances are typically thought to have two extreme points: positivism and constructionism. A positivist view states that the only way to explain reality is through objective empirical evidence and is therefore independent from a subject's individual perspective (Johannessen et al., 2016). Constructionism on the other hand suggests that reality is subjective and exists in the individual mind (Johannessen et al., 2016).

Similar terms also exist within epistemology: objectivism and subjectivism. Objectivism is the belief that there is an objective reality that can be understood as more information uncovers (Given, 2008). To understand the world, from an objective view, there must be an actual reality, according to objectivist epistemology (Given, 2008). On the other hand, qualitative research is dominated by subjectivism (Given, 2008). Subjectivism interprets interactions between researchers and subjects using interviews, as well as the active interpretation of subjective data, both being key characteristics of qualitative research (Given, 2008). Additionally, *interpretivism* is a research philosophy within

epistemology which addresses how researchers should interpret elements of their study (Myers, 2008). Researchers grounded in this philosophy presume that the only way to access reality is through social constructions like language, consciousness, shared meanings, and instruments (Myers, 2008). As a result, interpretive researchers generally favor qualitative analysis over quantitative analysis (Myers, 2008).

Both researchers sway against constructionism, subjectivism and interpretivism, as we interpret the nature of reality as a social construct and emphasize that the goal of our research is understanding, rather than obtaining an explanation. Additionally, we quickly decided that the goal of the research was to examine a specific case, and not necessarily acquiring generalizable or representative data. As well as having an impact on how we view the world, this also helps explain some of the choices taken regarding methodology throughout this thesis. Consequently, we decided early in the research process that we would employ a qualitative study, as we were confident that this was the most appropriate way to examine the chosen research question and theme. A group of researchers with a different philosophical underpinning might disagree and view the strengths of quantitative research as better suited to the problem in question, or even choose a different problem altogether.

3.3 Research strategy

A central question when designing a study is whether to employ a qualitative or quantitative method. These two approaches both have advantages and drawbacks. Quantitative research uses numbers or quantities, while qualitative research uses descriptive data. Typically, qualitative studies are well suited to answer questions such as *"how"* and *"why"*, as quantitative methodologies often have a hard time answering such questions, especially in situations where researchers do not know exactly what they are looking for (Kothari, 2009; Meyer, 2001; Yin, 2018). Additionally, in qualitative research methodologies researchers are investigating phenomena in accordance with the reasons behind human behavior (Kothari, 2009).

Recalling the research question, "*how has the Covid-19 pandemic impacted organizational learning on telecommuting?"* a qualitative approach is most suitable for illuminating the problem at hand since one of the objectives for our research is to uncover the experiences of workers in the company of interest. This is signaled using the word "how", which typically expresses that a qualitative method is suited. This is also illustrated by the conceptual model shown in 2.2.2, where the individual experiences are the concrete data that will be used to investigate the research topic.

3.4 Research method

To contribute to the topic of telecommuting in the most effective fashion, a single case study design was chosen. By looking at only one case, we were able to better examine and illuminate the topic within one specific context. Some of the reasoning behind this is that while the field has not received much attention before the COVID-19 pandemic, interest has been rising in the later year, something that we expect to also have consequences on the amount of literature. With more literature examining a similar situation, we expect that the contribution will be greater by providing an in-depth examination of one specific case, especially given the time limits at hand. A case study also allows for an in-depth and detailed look into the specific case chosen, as well as research of a contemporary phenomenon (Johannessen et al., 2016; Yin, 2018). The method has also been "deemed most appropriate to ensure an in-depth understanding of the impact of shock events on strategic decision making" (Bonn & Rundle Thiele, 2006, p. 616), further substantiating the choice.

Case studies have traditionally been criticized for their lack of generalizability, and many researchers and scholars view them as a form of "second class research". This criticism is well reflected by Fienberg (1977) who gave the following assessment of single case studies within education:

> *Even though the information collected on a single classroom group over the period of a year or more is extremely rich, the basic fact remains that for a single classroom study, N = 1 (p. 53)*

While these critical voices still exist today, case studies have nevertheless seen both widespread use and widespread defense over the last decades. For instance, Mariotto (2014) argues that case studies should not be expected to follow traditional normative research criteria, as striving to strengthen the generalizability from a traditional normative viewpoint limits the strengths of the case study design. This means that for this study, generalizability to whole populations should not necessarily be a goal, as this would be incompatible with the chosen research method. Rather, the goal should be to illuminate the specific case with sufficient depth.

Yin (2018) argues that to overcome the criticism and challenges around case studies transparency and outlining of research methods and procedures are paramount. He also points out that while these

challenges are not unique to research based on case studies, they might occur more frequently and demand greater attention. Mariotto (2014) classifies Yin as having a more traditional, normative view of the case study's limits, accurately reflecting our take on Yin's positivist principles as discussed later in chapter 3.7 (Trustworthiness and credibility). However, there is still overlap between Yin's and Mariotto's arguments. A transparent research process allows further research to understand and build upon the findings and knowledge of a case study, even though the cases and situations might differ, leading to a more holistic understanding of a topic.

The aspect where case studies have most universally been accepted is in theory building, meaning the developments of new theory (Eisenhardt & Graebner, 2007; Yin, 2018). Now while our research potentially threads old ground within several topics, the intersection of these topics, as well as the situation in which they are researched is new, meaning that there might be deviation from the existing literature. Using a case study allows us to explore this intersection with a blank mind. Eisenhardt and Graebner also, similarly to the above authors, point out that there are challenges in utilizing case studies. They argue that some of these challenges can be circumvented, or at least mitigated through good research design and precise language. Although the debate on credibility is still proceeding, case study approaches seem to be increasingly popular in qualitative research (Hyett, Kenny, & Dickson-Swift, 2014)

After conducting the interviews, we saw that the opinion among those interviewed were quite similar with a high degree of overlap. This meant that data saturation, at least on the main themes was reached earlier than anticipated. In retrospect, smaller sample sizes and multiple case units would therefore have been a viable alternative and might have allowed for a broader set of opinions and experiences. However, as we had no way of knowing this before designing the study we still stand by the original choice.

3.5 Sampling

The study ended up with 14 voluntary informants. This group consisted of employees in the age group between 25 and 60 years and had a balanced representation of genders. The sample also consisted of employees in a variety of positions. Some held positions with better access to knowledge about the effects of telecommuting within the company, such as employees within management and HR. Other were more regular employees, primarily engineers. We got in contact with the employees through a HR Manager within the company, who was instructed to recruit a varied sample of informants. As he

had a better overview of the employees within the company, we allowed him to recruit based on his own judgement, instructing him to strive for variance in the informants gathered. This is in line with Stake's (1995) notion that researchers should strive to recruit the "best" informants, meaning the informants that are able to "best help us understand the case, whether typical or not" (p. 56). The demographic factors desired revolved around gender, age, time and different roles within the company. Additionally, we wanted experience with telecommuting and digital platforms as a dividing factor. In contrast with Stake, Curtis (2011) states that *"In an ideal research environment, there would be no investigator bias... Samples would be random"* (p. 1320). As stated above the sample process was conducted through a HR manager who agreed to aid with finding participants.

One potential issue with the fact that digital meetings were utilized is that it may lead to lower participation by subjects not comfortable utilizing digital tools, which are often used in combination with telecommuting. The consequence of this is that the experienced benefit may be skewed higher because of the type of informant volunteering, causing less accurate findings and conclusions. However, among the group asked to participate, everyone agreed to participate in the study, remedying this issue. One could also argue that with the use of digital meetings, some of the *barriers* of accepting to aid this type of research may be lower in regard that the subjects are not required to travel to a meeting area and can attend the interview in the comfort of their own home.
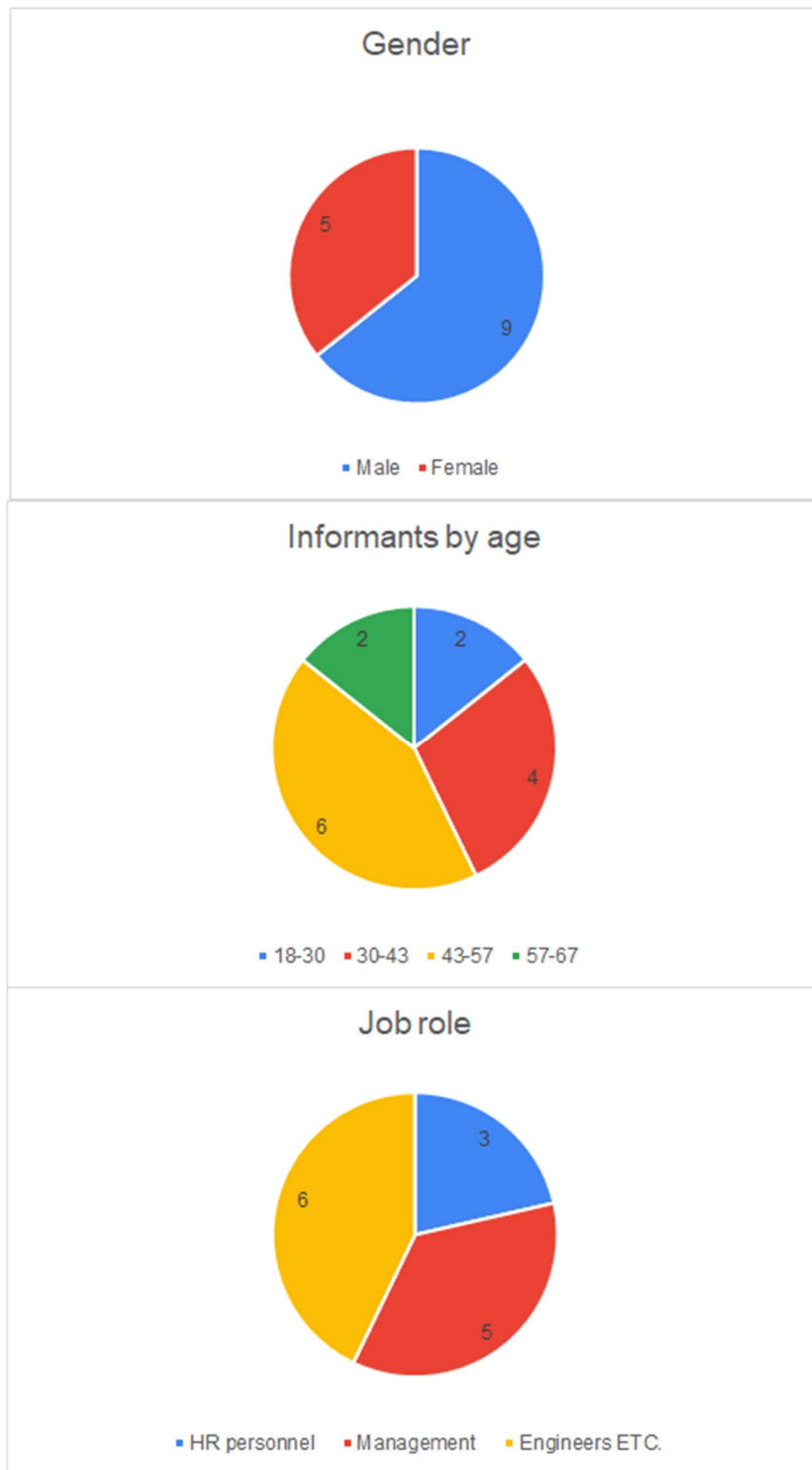
Figure 3: Demographic tables

While this led to a varied and well-informed sample, there were also drawbacks related to the sampling strategy. It potentially opened for opportunistic behavior, such as purposely selecting

informants who were positive to the company's handling of the pandemic, to make the company appear in a better light. We have no suspicion that such behavior occurred in the sampling process, but the possibility cannot be entirely written off, especially due to the company being anonymized in the study.

3.5.1 Data collection

To answer the research question, we chose to do semi structured depth interviews. The strength of interviews is that they allow for a wider range of answers from informants, better allowing them to present their experiences and perceptions (Johannessen et al., 2016). This was especially helpful because of the social backgrounds of researchers. With both researchers being young and well experienced in the digital world, we found the change to new working methods relatively unchallenging. However, this does not necessarily reflect the larger workforce, and we had to presume that our assumptions before the study might therefore be biased. Utilizing one to one interviews therefore allowed us to better capture experiences that deviated from and challenged our conscious and unconscious assumptions and biases.

To obtain information about the subjects organizational learning and telecommuting we chose to utilize depth interviews. When utilizing depth interviews as a qualitative data collection method, the objective is to discover underlying motives and desires, in addition to assessing participants attitudes, opinions, and behavior (Ko1thari, 2009). Furthermore, interviews are often used for understanding interpretations and experiences (Dowling, Lloyd and Suchet-Pearson, 2016; Johannessen et al., 2016). Other alternative techniques such as focus group interviews and projective techniques could be used, however the flexibility and overall structure of the data collection process seemed likely to benefit more from using depth interviews, from both the researcher's perspective, but especially from the interview subject's perspective.

Because of restrictions limiting traveling and physical attendance all the interviews had to be conducted using online tools. We chose to use Microsoft Teams for this, as we were informed that this was the primary digital tool utilized by the case company for the past year, meaning that our informants were already familiar with using it. The interviews were mostly conducted through video calls, which allowed us to get some impression of the body language of the informant. It also helped gain a semblance of connection with the informants. The audio from the interviews were recorded with the permission of the interview participants to give us the possibility to accurately transcribe

them later. We were also able to conduct the interviews within a short time span, in this case, we conducted 12 interviews within an 11-weekday period, with the 13th interview being canceled due to illness. Furthermore, we were able to add two more interviews about 7 days after the initial interview session, due to different reasons these interviews were scheduled late.

Maintaining the interview dates close to each other was preferred, to minimize systematic differences that might occur due to factors such as interviews being conducted in different stages in the pandemic. Therefore, securing that the participants are interviewed during the same or a similar stage of the pandemic may be appropriate to differentiate and compare results. For example, comparing results from an interview before and after new restrictions are initiated may influence the short-term attitudes and therefore the participants' response towards the subject of telecommuting. However, we also had to balance this with regards to maintaining high quality on the interviews. Interviews can be taxing on the interviewer, who had to continually try to pick up on interesting leads hinted to in the conversation, as well as keeping the conversation flowing. Because of this, we conducted no more than three interviews spread out throughout one day, as we felt that more than this meant that the quality could suffer.

Conducting the interviews digitally did introduce some potential challenges. Digital meetings run the risk of feeling less personal, potentially putting informants less at ease and decreasing social contact (Iacano, Symonds and Brown, 2015). Allowing informants to be comfortable is an important part of the interview process, and there is a chance that this has been compromised through utilizing digital tools instead of face-to-face meetings. We attempted to mitigate this by using cameras ourselves in every interview, and by getting most of the informants to use their camera as well. Three of the informants did not have the possibility to use their camera due to limitations in equipment or internet capacity.

The interview guide outlined very open-ended questions, while the interviewer tried to ask more specific questions as follow up questions to information presented. These more specific questions were used for either acquiring context around the informant's work life, or to get the informant to follow up on interesting information suggested by the informant's answer to the more open-ended questions. The interview guide is briefly based on Johannessen et al. (2016) chapter regarding what to be aware of when designing an interview guide. Accordingly, we would categorize our interview guide (appendix 2) as semi-structured, with specific topics to ask participants about, also while making room for open ended and more investigative questions to specific contexts.

3.6 **Data analysis approach**

In this section, we will discuss our approach to analyzing the data.

3.6.1 Transcribing

After the interviews, each interview was transcribed to be able to code the data in the next stage of the analytical process. We ended up with around four hours of audio recordings in total, which we found was a manageable amount of transcription, especially given that the group had two researchers to spread the workload on. Early in the transcription process we decided that we would do partial transcription, meaning that pauses, inflections, and excess words were not transcribed. The reason for this was that primarily it allowed for a less time-consuming transcription process, and we felt that it did not impact the quality of the transcriptions.

3.6.2 Coding

After the transcription process we went on to coding the data. The coding process is an important part of qualitative methodology, allowing the researcher to organize the data collected (Basit, 2010). As all transcriptions had been done in NVivo, we chose to continue the coding process in the same application. There are many approaches to analyzing data, and Yin outlines four main general strategies: relying on the theoretical propositions, working from the "ground up", developing from the ground up, and examining plausible rival explanations (Yin, 2018, p. 216-221). We settled quite quickly on the second method, working from the ground up. We also were unsure whether the context we conducted our research in would be impactful on the results, which led us away from leaning heavily on existing theory. This means that our coding process was done in an inductive manner.

Since coding was far less time consuming than transcription, we quickly decided on a three-stage method for the coding process. We started out by mutually agreeing on the codes we would utilize, making a common coding three (Figure 4). Then, we separately coded each transcribed interview, and compared and discussed the differences in coding between the two researchers. This allowed us to approach the coding process from our two separate viewpoints, but also allowed enough common ground to easily compare the result. Two researchers are often viewed as a minimum to achieve intercoder reliability, meaning agreement between multiple researchers on how the same data set should be coded (O'Connor and Joffe, 2020)

Nodes

Name	Files	References
Experiences telecommuting	0	0
⮑ After March 2020	7	8
⮑ Demographical differences	0	0
⮑ Digital tools	8	14
Challenges	3	4
Learning digital tools	13	28
Other working methods in the future	9	14
Equipment and facilities	8	19
Impact on work efficiency	11	21
Learning telecommuting	3	6
Negative	11	34
Perceived general experiences	3	5
Positive	12	61
Prevalence	7	11
⮑ Social aspects telecommuting	6	12
Challenges	9	25
Cooperation	10	17
Telecommuting in the future	14	39
⮑ Before March 2020	10	18

Figure 4: Coding tree (NVivo)

After coding the data separately, we utilized Cohen's kappa to measure the inter-rater reliability in the coding. By averaging the kappa for each coded element, we found that the average kappa between the two researchers was 0.84. Typically, this rating would be interpreted as strong (McHugh, 2012), or even very strong. However, we also saw some disagreements on certain relationships, including two codes where the kappa was negative. These coding choices were further examined and discussed internally in the research group, and it turned out that the disagreements were mostly confined to some of the shorter interviews, and small choices in which category to code text too. This mostly stemmed from the fact there was some overlap and ambiguity between categories. In the end, we agreed that these disagreements had a low impact on the data material, and no further actions were taken.

3.6.3 Language

Chidlow, Plakoyiannaki, and Welch's (2014) argue that when translation occurs, it becomes an important and complex part of the research process, and that researchers therefore should reflect on the choices taken. The first linguistic challenge we encountered was the fact that while the master thesis is written in English, all the interviews were conducted in Norwegian. This meant that in addition to the usual qualitative issues of subjectivity and interpretation by the researcher, we also had to be aware of meaning and intent getting lost in translation. For instance, telecommuting and its direct translation is not widely used in Norwegian, but is rather referred to as "using a home office". Therefore, a key question before conducting the interviews was whether to actively try to incorporate the use of the word "telecommuting" or direct translations, or rather use the more understandable term "hjemmekontor" (home office). In the end, we settled for the latter, as we deemed the alternative to be confusing for the informant, and the meaning of the term "hjemmekontor" was closer to the understanding of the word seen within the existing literature.

In addition to some dilemmas with wording in the interview guide before the data collection process began, we also had to make a choice with regards to whether to present the original quotes or translated quotes in the presentation of our findings. We quite quickly decided that using translated quotes would be most appropriate, especially when considering the reader friendliness of the dissertation. This presents some challenges with regards to reliability, as these translations have the potential to be colored by the researcher. To be as transparent as possible, we therefore decided on presenting an example of the translation process, and typical choices made during the process. Below is one example of how the translation process worked:

"Både jeg og veldig mange andre vi bare hev oss på hjemmekontor og så satt vi oss på stuebordet som meg eller på kjøkkenbordet også begynte man å jobbe. Og i begynnelsen så går jo det helt greit sant, om man ikke sitter så veldig godt eller ikke har lysforhold eller det er andre i huset som forstyrrer så klarer man å tilpasse seg. Innledningsvis så gikk det greit, for man bare hev seg på det liksom."
-Informant 14, original quote.

"Both me and many others just jumped into telecommuting and sat down at the living room table, like me, or the dining table and started working. And starting out it works decently right, even if you do not sit very comfortably or have the right lighting

conditions or have other people in the house disturbing you, you're able to adapt.
Initially it worked decently, because you kind of just jumped into it."
-Informant 14, translated quote.

The translation is made with the intention of keeping the same message as the original transcript. Because of this, it is not a direct translation word for word, but rather an attempt to keep the meaning as close as possible to the original transcript. The oral presentation tries to stay close to the original, even after translation. It was especially difficult to translate idioms. One instance is "jump into" instead of the more directly translated "threw ourselves at". According to Cambridge dictionary, the latter means to do something actively and enthusiastically (Cambridge Dictionary, n.d.a), while the former means to do something suddenly without putting much thought into it (Cambridge Dictionary, n.d.b). In this case, "jump into" is the most appropriate translation to convey the original meaning. Being aware of such delicate differences in meaning is important for good translations, but also puts high demand on the researcher's knowledge of the languages used. Additionally, we chose to not formalize the English in the translations, using contractions such as "you're", as this was closer to the original oral, informal tone of the interviews.

3.7 Trustworthiness and credibility

Throughout this chapter (3) we have explained the circumstances that this study revolves around. However, when addressing the trustworthiness of the case study, initially we examined research regarding reliability and validity based on Robert K. Yin's (2018) principles for case studies. These principles consist of construct validity, internal validity, external validity, and reliability (Yin, 2018). However, through further examination of these credibility tests in Yin's book, we uncovered distinct differences in views among Yin and our case study. Yin (2018) seem to mainly focus on meta-studies and multiple case studies, which means that using these principles to our single case study was inappropriate. Therefore, through a discussion of our philosophical perspective, we decided to drop Yin completely, and focus on more subjectivistic views from sources such as Robert E. Stake (1995) and Sinkovics, Penz and Ghauri (2008), which reflects our philosophical views and the targets of the study to a greater extent (which is emphasized in chapter 3.2).

3.7.1 Reliability and validity discussion

As stated above, throughout this chapter (3), we have realized that the tests Yin describe may be inappropriate to apply to outline reliability and validity in our single case study. However, this discussion is important to highlight the differences in philosophical perspectives between Yin and our research views. Yin's book indicates that he views knowledge from a more positivistic standpoint (objectivism). As discussed in chapter 3 initially, both researchers have a more subjective view on this matter (subjectivism and interpretivism). Therefore, it is natural to explore both sides of this philosophical discussion.

For a more subjectivist view towards trustworthiness and credibility for our qualitative methodology, we initially examined Sinkovics et al. (2008) article which primarily focuses on enhancing the trustworthiness of qualitative research. Secondly, we inspected Robert E. Stake's (1995) book *The Art of Case Study Research*. These were chosen because of their more subjectivistic view when addressing trustworthiness in qualitative research.

A matching argument between our views and arguments for choosing a single case approach is reflected in Stake's (1995) book, where he states that *"Case study research is not sampling research. We do not study a case primarily to understand other cases."* (p. 4). As stated above when discussing Yin's perspective of reliability and validity, we acknowledged that our objective was not generalization of findings. Stake (1995) further states that *"Our first obligation is to understand this one case"* (p. 4), which mainly has been the objective for our research throughout the selection process of methodology.

Sinkovics et al. (2008) discusses what measures and tools can be utilized *"to make qualitative research findings more trustworthy"* (p. 690). Generally, quantitative tests and measures are inappropriate to use to determine trustworthiness among qualitative research, according to several researchers (Sinkovics et al., 2008; Denzin and Lincoln, 1994; Lincoln and Guba, 1984). As a result of this, Sinkovics et al. (2008) defines other factors that needs to be present to secure trustworthiness among qualitative literature. These factors are credibility, dependability, transferability, and confirmability (Sinkovics et al., 2008). They also propose specific research strategies for dealing with qualitative data valuable, *"especially data that stems from interviews"* (Sinkovics et al., 2008).

3.7.2 Credibility, transferability, dependability, and confirmability

The term credibility is defined to mirror internal validity, as explained above from Yin's (reliability and validity) tests. It primarily focuses on representing the quality and match between the constructed realities of respondents and the reality presented by the researchers (Sinkovics et al., 2008). When examining this study, the credibility is mainly rooted in the transparency of the purpose of the study. For instance, if we would claim that this single case study contains a high degree of generalizability, we would not understand the limitations of our area of research and methodology enough to present credible findings.

Similarly to credibility mirroring internal validity, transferability reflects external validity and generalizability (Sinkovics et al., 2008). As mentioned throughout this chapter, we cannot claim a high degree of external validity or generalizability, however when considering the measures taken to attain replicability in our case study, by presenting a semi-structured interview guide (appendix 2) alongside a thorough methodology chapter explaining the phases of data collection and the background for our research choices, we believe a fair degree of transferability is presented. Ultimately, the general purpose of the study was not to uncover generalizable findings, but to illuminate the research question within a specific context.

Dependability is a term that is similar to reliability (Sinkovics et al., 2008). Ultimately, the primary source of dependability (reliability) of this study's findings is the number of participants we have interviewed (N=14), and the factors that divide them as explained in chapter 3.4 (Research method). By this, it is easier to get an overview of how the general, or average, employee within the case company thinks and experiences the unique situation examined.

Confirmability reflects the term objectivity for quantitative research. Confirmability indicates that researchers are required to show their data and how interpretations are made (Sinkovics et al., 2008). In this study, we have openly discussed the decisions made, for instance, the issue regarding the translation process of the data collected, see chapter 3.6.3 (Language).

3.7.3 CAQDAS

Throughout Sinkovics et al.'s (2008) article, they frequently mention computer assisted qualitative data analysis software (CAQDAS) as reliable supplementary strategies for increasing credibility, dependability, transferability, and confirmability. In our research, we relatively early decided to use

the qualitative data handling software NVivo, which is one of the mentioned software under the CAQDAS definition presented (Sinkovics et al., 2008). NVivo has features making it beneficial for transcribing, structuring, information sharing, coding, and reliability testing of coding. Using NVivo, we were able to compare interview responses, in addition to the coding choices of the researchers. As a measure to secure credibility and confirmability, the researchers coded all the interviews separately, then tested how similar the coding nodes where placed, using Cohen's kappa (=0,84). This uncovered that the coding output was similar among the coders, as discussed in chapter 3.6.2 (Coding).

Furthermore, Sinkovics et al. (2008) argues that international business research *"should take more emic perspectives…"* (p. 692), which then may be transformed to *etic* terms. In this context, *emic* perspectives refer to subjectivistic and qualitative views, opposed to *etic* which describes more objectivistic and quantitative perspectives. In addition to this, they argue that the use of CAQDAS (NVivo in our case) formalizes how researchers can view their data, for instance is interviews, and therefore strengthen methodological precision (Sinkovics et al., 2008).

Additionally, we believe transparency around the choices we have made and how the processes were executed is key for securing reliability. It may also be relevant to highlight that we generally lack experience with research and execution of studies as portrayed in chapter 3.4, this factor may impact the reliability of the study.

3.8 **Ethical considerations**

This section will present how the basic principles of ethical research conduction has been considered. Johannessen outlines three main ethical principles for conducting research: 1) The research objects right to self-determination and autonomy, 2) The researcher's duty to respect the informant's private life, 3) The researcher's responsibility to avoid damage.

The first basic principle of doing research involving informants is that every informant has been informed of what participation entails and explicitly agreed to participate. In addition to being an ethical baseline, this is also statuary according to the Norwegian "personopplysningslov" (personal information law), in accordance with the new General Data Protection Regulation (GDPR) through EU newly implemented mid-2018. Agreements were collected in writing through a written information sheet, created in accordance with Norwegian law. In addition to this, prior to the start of each interview the informant was asked if they had read and understood the information in the written information sheet and given the opportunity to ask questions. Additionally, they were informed that the audio would be recorded and were explicitly asked if they were fine with this. All informants agreed to this. The procedures for collection and storage of data have been approved by NSD (Norwegian center of research data).

The second principle is that the researcher needs to allow the informants do decide which information about their private life is made available, as well as ensure that this information is not misused. We did not ask questions about the informant's life situations specifically. In situations where informants chose to disclose personal information, we made sure to not present this information if we suspected that it may lead to identification of the specific informant.

The last basic principle is that the research process should not be harmful to the informant. While this is perhaps most important within medical science, it was still an important principle for our research process. The drastic changes caused by the Covid-19 could have increased loneliness and isolation, and it therefore important to us to not cause discomfort among the informants. We also explicitly and successfully attempted to avoid topics such as mental health among informants, as this could potentially be perceived as disturbing by informants. As an additional measure to maintain informant comfort we also explicitly informed them that they had the right to withdraw during and after the interview, an option none of the informants chose to use. While we have no suspicion that any of our informants felt uncomfortable during the interviews, it is impossible to rule out completely.

4 Findings

The current chapter will present the findings of our study. We present the data by theme, and this data will then create the background for the discussion conducted in the subsequent Chapter 5. Due to the novelty of the context the research was done in, the categorization was done in an inductive manner, reflecting themes seen during the interview process, as opposed to relying heavily on existing literature.

4.1 Implementing telecommuting

The abrupt transition to telecommuting was something that most of the informants were exposed to. Most of the sample, with one exception, had used telecommuting close to 100% since March 13th. 2020. For all the informants within the sample this was their first-time implementing telecommuting into their work life in a systematic manner. Some of them had used it occasionally, in cases where they had to stay home for various reasons. However, the general amount of experience within the sample was low. One informant immediately felt comfortable with the adoption:

> *Informant 10: Well it worked surprisingly well. I don't really think I had any problems. The only thing was that I had to set up screens and stuff like that, but that went quickly.*

However, other informants needed more time:

> *Informant 6: Well, in the start I did not like it, because I had been away from work for quite a long time, ready to start working again, maybe especially after I started on this project with a new department, with quite a lot of people I had never met personally. In that case, it's a bit lame because you miss the... You kind of don't get to know people as all the talking is about work. (...) In the start I found it boring, perhaps because of my mindset, that I focused on the things I missed out on.*

> *Informant 9: Well it was a bit strange in the start, in March right. You had to adapt to it. Everybody was sitting alone in their living room or their office or whatever they had at home, but it worked itself out pretty quickly. A LOT of meetings in the start, right, but after that it became better after we found out what was necessary and what worked best. So it worked itself out after a couple of weeks.*

4.2 Organizational learning

The main aspect examined is the learning process that has occurred on an organizational level. The main learning point found was clearly that telecommuting as a working method worked better than our sample had anticipated, with many outlining that it had a positive influence on at least some of their daily tasks:

Informant 6: Sometime during the autumn, maybe around September-October my mindset turned around to focusing on all the stuff that works, and how it mostly works really well! So now I've become far more positive to it, as it makes everyday life go around far better. You don't spend an hour in traffic every day, you can pick up your children from daycare in 3 minutes. You don't need to plan as much. So a combination would probably be optimal, but right now I think it works well.

Informant 11: Naturally I was a bit skeptic when starting out. We used telecommuting for a month here and a month there, but we didn't believe it would last this long so it took a while before we were able to set up properly when it comes desks and screens and chairs and all the things you need. Since we didn't know how long it would last. A bit challenging when it comes to responsibility for employees, but that has worked out well. And the way it works now I'm skeptical about going back to work normally at all!

Informant 14: I think companies might have had an awakening when considering "what are we able to do". We have delivered very good results even with. Most of our office locations at home. And we're still able to cooperate, able to deliver, and to meet the dates and expectations we are given. And I think that has given a small awakening up the chain of command, not only in our company. At the same time it puts certain demands on you, it is in many ways freedom under responsibility, so you have to take the responsibility you are given. Not that we haven't done that before, but it is perhaps more visible now.

Some informants highlighted an increase in trust within the organization:

Informant 11: It's always been a bit like "you can't telecommute because you are in charge of personnel", right? That's been the old way of thinking, along with "will people even work when they sit at home and nobody is watching them"? All of that is gone now, because we have seen how well it works. So all those beliefs are gone to be honest.

Informant 3: I believe, perhaps that… The feeling, or the thoughts on telecommuting has gradually changed throughout this pandemic. Previously there probably was some skepticism around telecommuting: "Well did the employee actually do work or did he not?". And I think within our organization it turns out that they take at least as much responsibility while they are at home, and they deliver so well that. At least for me, and other managers I know there's no longer any skepticism towards people telecommuting, because they fully deliver, and maybe even better than before. So I have no skepticism towards people finding it more practical to use telecommuting even after the pandemics, I have no problems with that.

One informant highlighted that the negative effects of telecommuting on exposed groups might lead to a higher focus on mental health:

Informant 5: When it comes to telecommuting, we need to learn how to take care of employees, because... When you meet your colleagues at work, you might get an idea of how they are, at least to a larger degree when they sit at home and, you might not even have your camera turned on like we do now, and even when you do it's not at all like being in the same room and it's still very different. So I think, from the company's side, there's a learning process taking place, because of course not everybody thinks it's amazing to telecommute. Some people live alone, and then they telecommute when they work, and when they log off they are still at home in the same living room, right? And I think that can hurt mental health, so I think it's becoming apparent that even though the company might not like it, it

becomes more and more important to focus on mental health, and keeping in mind
that coworkers need to be taken care off.

4.3 Differences in demographics

One of the assumptions we started out with was that older demographics would have a harder time adapting to telecommuting. One of the reasons was that we theorized that there might be barriers to utilizing new digital tools. The two informants in the oldest age group (57-67) had the following to say about learning digital tools:

Informant 2: Well like previously mentioned I'm [57-67] years old so many would
claim that we are a bit expired when it comes to using computers and stuff like that,
but (Microsoft) Teams specifically has been okay to learn in my opinion. There's a
decent user interface. It's not really too advanced so even I have been able to learn
it and know how to use it. Use the functionality. Maybe I don't change the
background and stuff like that. I think it is very well suited to that kind of work.

Informant 12 took a broader look at learning digital tools:

Informant 12: I think the development has been surprisingly good when looking at
how people have grown accustomed to using digital tools in this way. I think we
have developed meetings in a good way, and that it works better and better. It's
almost more common. Or it's 100% common to use digital meetings even if we are
at the office, that we sit two offices apart and talk through digital media, so we
avoid. Always being in front of each other.

Other informants chose to reflect on how not only age, but also related things such as civil status and residence influenced the use of telecommuting:

Informant 10: I might be in the perfect age group for people who are able to make
telecommuting work. My children are adults, and my wife goes away to work so
I'm able to sit here alone and not get disturbed. So naturally, you are dependent on
not having three preschool aged children who run around screaming and. A lot

going on. Or, like I've heard others talk about, three teens at home who are dependent on using computers and the internet, so you might have to create an office space to make it work. So there's a frame. For people it might fit. It's not for everyone. That also goes for job roles.

Informant 3: It worked well for me, because I had a dedicated room where I had an office from earlier. So I adapted quickly. But, when I think about being head of a department, role, and the employees in the office or department. Naturally, there are differences between the people living in a big house, with a dedicated room, with adult children and things like that that have moved away, and the people living in small apartments with young children and no room to dedicate to an office space. So, among those lines there were challenges when starting out.

One informant highlighted how he felt that personality type had an impact on the use of telecommuting:

Informant 14: I have a pronounced introvert personality, even though it might not seem that way right now! It has had a really small (impact), well it (telecommuting) didn't really bother me at all. That's my opinion though, and clearly many people have had quite the awakening, or a reality orientation on what is really important form them, and well, I have some.. Pretty extroverted friends, and they find this completely horrible, while I think it's completely fine! With telecommuting. So I think people are more aware of their own needs in everyday life considering your needs for social interaction, and being alone, and being many people, that may be worth carrying forward.

Some informants also reflected on how job role and work tasks impacted telecommuting:

Informant 10: The dominating aspect is that it is a fully usable way to work. And we as a company will have an element of telecommuting as a part of the way we do things going forward as well. And that's positive. If you do tasks here you have to

immerse yourself like I do quite often you are perhaps able to do things even more effectively if you sit alone.

Informant 14: One thing I've noticed that is important is what type of job role you have. Like I said I have a role where I communicate with others to a large degree, have a dialogue and meetings with others, and I feel like that is a challenge. Right, it's not easy to meet people when all tutoring is on Teams, whereas previously we had classrooms, so you lose a lot of the "face value", which I find very important. So I think that has been challenging. Of course, when you are an engineer and sit and you look at a valve, and you only have that valve to look at and you have to look at it all day, then of course telecommuting might be much better, if you do not get disturbed. But for people in my kind of role it can be a bit more challenging.

One informant presented an interesting opinion, where he thought that being able to work from the office, as opposed to from home, was especially important for the people doing tasks typically regarded as most suitable for telecommuting, as they by nature was more isolated in their work:

Informant 3: Then you get other people, I think it's important to focus on the differences between being a leader and being active in a lot of sales meetings and personal meetings and things like that, and maybe having Teams-meetings many times a day. You talk to people all day long, but then you have other employees who maybe sit and construct something, and have maybe one meeting a week. In some ways I think it's more important for those employees to have a job to go to. Because they sit around so much with individual tasks. I think there is a big gap within our organization, when it comes to the tasks you have in each role.

4.4 The positives of telecommuting

Many informants mentioned in their general experiences that telecommuting had a positive impact on their work life. Many informants experienced that specific work tasks were made easier by telecommuting:

Informant 10: If you sit at home one day you are able to work in peace in an entirely different way, for instance I write a lot of documents or do calculations, and you can sit more undisturbed, instead of sitting among other people who for instance create distractions by asking something. So if you have something that has to be delivered before a certain deadline you can work more effectively at home. That you can sit alone and set your status to "busy" on Skype. So that's an advantage.

Especially meetings were highlighted as more effective when conducted over digital tools:

Informant 3: Many meetings are conducted more effectively, even though we are 20-30 people in one meeting there's just one meeting we are attending. Earlier when we met physically, at times there could be both two and three parallel meetings going on in the same conference room.

Informant 10: In my experience you are able to work more effectively, especially when using (Microsoft) Teams as you are able to have a lot more meetings in one day than usual, previously you spent a lot of time going between meeting rooms, and then you met someone and stopped and talked, and arrived late to the meeting. But now everything goes punctually every minute. There might only be a minute or two between meetings. Everything is more effective.

Other found that the work/life balance was easier:

Informant 14: The positive is that.. Everyday life, the work/life balance is easier for me. (...) I save an hour in the car every day, and I think that's quite alright. And cooperating over (Microsoft) Teams and stuff like that I think works very well.

Some informants also argued that getting in touch with the right people were easier:

> *Informant 7: I think it's easier to get in touch with people when you're*
> *telecommuting, it's easier to just call them on Skype than it is to head to their*
> *office, so I think that's one of my key experiences, and I hope to keep the same*
> *contact with people when I get back to the office. Not just sit in my office and talk*
> *to the two people nearby right.*

Another common positive was, unsurprisingly, the extra time made available by not having to commute:

> *Informant 11: ...I live in a place where I have to spend half and hour-45 minutes*
> *both ways, going to work. So of course, I save an hour every day, maybe more,*
> *every day in transportation. So, it might be challenging going back to being stuck*
> *in traffic after this.*

One informant also highlighted that cooperation between different locations had been better, as the usual geographic boundaries were now removed:

> *Informant 9: Especially for me who usually sits at [location 1], so I don't always*
> *talk with the people at [location 2] every day, the way it used to be. When we were*
> *sitting at different offices, So I think that is positive. (..) We are the same*
> *department, but we are at different physical locations. So, I feel like the team*
> *cooperation has almost become better during COVID-19. Even though we have not*
> *seen each other in real life.*

4.5 The negatives of telecommuting

As stated previously, most of the sample had used telecommuting close to 100% of their work time for the last year, and a clear pattern emerged when it came to discussing the negative impact of telecommuting:

> *Informant 14: You miss out on quite a lot. The social interaction with colleagues is*
> *not to be underestimated. (Microsoft) Teams is one thing and you can talk there,*

but heading over to the neighbor office and drinking a cup of coffee with a colleague and hanging around by the coffee machine and that type of stuff is important. It's important for the employees. And of course you miss out on that now, so I think many people are looking forward to doing those things again. Even though telecommuting has it's advantages as well.

Informant 3: One thing that has disappeared is of course the social interactions with colleagues around the coffee machine and in the hallways and on the way to meetings and stuff like that. And in those situations you pick up a lot of information about other disciplines, other projects, other departments that are worth getting, so you're more vulnerable when telecommuting. You don't always get the big picture and the refill of information you get when meeting physically.

Informant 5: Well we miss out on the coffee talk right? Where you meet someone because you're getting a cup of coffee, and then you hang around and talk about.. Typically the project or you talk about more social, private things, you miss out on the loose talk. Right now we meet each other digitally because you have a meeting, and there's a certain topic to discuss. But the informal information flow is a bit missing.

One informant highlighted tutoring as especially challenging:

Informant 14: We do training of both new hires and people who have been with the company for a while, such as repetition training, so we have training of many different categories of personnel. New hires too. And that's where I perhaps feel we lose out the most. To have new hires without being able to be there in the classroom with them. We have one type of training that lasts three days, and to not be able to be in the classroom with them is demanding, extra demanding. We're able to do it, but in my opinion the quality is far worse than if you were in the classroom with them. And that may be especially important for new hires, to be there with them and meet them. They might have extra need for people to be there with them. But for others who may only do some repetition or something like that, it

works out well enough. But no matter what, training on Teams will never be quite the same as training in the classroom. It is just good enough. So if I could choose I would definitely choose class rooms.

We also had one informant who was skeptical of telecommuting as a whole:

Informant 15: It is easier to work in a regular office than at home, because you always have a door, someone to discuss with, some social interaction, you can have a break. Now you just get locked to a desk and.. Some days it gets very intense, and you forget all about it (breaks). And all the social stuff, it gets very monotonous. (…) So to telecommute is not my favorite (working method).

4.6 Future implementation

Most of the sample generally had a positive impression of using telecommuting. Based on the data presented thus far, it should come as no surprise that many are interested in implementing the working method even when the pandemic subsides. However, the informants also thought that changes were needed from the way telecommuting has been implemented during the COVID-19 pandemic:

Informant 3: For my part telecommuting works very well. I see that I'm able to save time personally, as I have a long commute during rush hour, so I get almost two hours extra each day. So there is a small bonus sitting at home, but not on a 100% basis. I would prefer a day or two a week, that would be nice even after the pandemic. For me.

Informant 4: If the company rolls out a solution where we can have a combination, I would support a combination solution. I think that would be nice. So you just have to let it come, I would be positive.

Informant 5: What needs to happen for me to want to continue using telecommuting? Nothing! I feel like a combination would be the best solution. At

this point we are used to this as a part of everyday life. So we're used to it. But I think the best thing would be a combination. We miss meeting each other, colleagues and such, and it's important to get out of the house as well. So heading to work for a while, that's something we're all looking forward to. And I feel like most people feel like it would work with working at home a bit. So I think a combination is something we will do more on a permanent basis when we're heading back sometime.

Informant 3: The social aspect, we're able to do it, but we will never be able to do it as well as when we can meet from time to time. So I have no belief in some 100% telecommuting forever. But that we could be able to create a good solution somewhere in between, you could call it a 50/50 solution or something like that, I could live with that. And it could lead to good things. So it's exciting to follow the further development.

One informant also told us that the company was already working on a plan for carrying the learning effects forward:

Informant 14: In our company there is preparation of something called blueprint. And that's related to exactly this, making it possible to continue telecommuting even when this (COVID-19) ends. And that's good, that it is facilitated.

The informant who was negative to telecommuting was also skeptical to keep utilizing it:

Informant 15: No, I'm not going to keep doing it! *Laughs*. No, I have had the possibility before, but it's not an alternative for me.

5 Discussion

In this chapter, we will examine how the case company has experiences using telecommuting, by drawing upon the findings presented in Chapter 4. When relevant, these findings will be compared to the existing theory and research on telecommuting and organizational learning (reviewed in Chapter 2).

5.1 Organizational learning on telecommuting

The primary focus of this thesis is how the COVID-19 pandemic has impacted the learning process on telecommuting within our case company, and before going further in depth it is important to ask two questions. First, has there been an impact on organizational learning regarding telecommuting? And second, is that learning caused by the COVID-19 crisis? Based on the data collected, it appears clear to us that the answer to both questions is yes.

It appears that over the latter year that has been a clear acceleration in the organizational learning regarding telecommuting. The data collection suggests that there has also been learning occurring on several other topics as well, but naturally the main learning aspects discovered were related to telecommuting. In Chapter 2, different definitions of organizational learning were presented, but no matter the definition, there is little doubt that the learning presented by our informants fits into the existing theory on learning.

It also seems obvious that the organizational learning on telecommuting has not only been accelerated but has been directly caused by the COVID-19 pandemic. There is a direct cause of effect from the COVID-19 pandemic coming to Norway, to governmental and internal restrictions leading to widespread use of telecommuting, to the knowledge the company and its employees possess today. This is further based on the fact that the case company was positive to letting employees work from home even before the COVID-19 pandemic, a possibility that many informants acknowledged had been there, but had barely been utilized. This suggests that if the COVID-19 pandemic had not existed, the learning would not have occurred.

After this acknowledgement that the data collected supports further research, the next step is to start examining the nature of the learning occurring. From Chapter 2 we remember Huber's (1991 definition that "an organization learns if any of its units acquires knowledge that it recognizes as

potentially useful to the organization" (p. 89). In this study, the units examined are employees within the organization. The most common and important learning that has occurred among our informants is the feasibility of utilizing telecommuting. As seen in chapter 4.2 many of the informants expressed surprise on how well telecommuting has worked. The high agreement on this might appear surprising, especially because there have been clear barriers to successful telecommuting among the informants.

For the previous year, almost all the informants have used telecommuting close to 100% of the time, something most of the informants acknowledged as a challenge. However, it seems to have had little impact on their opinion of telecommuting, which remains positive. This supports Golden and Veiga (2016) findings that job satisfaction increases with the extent of telecommuting up to a certain point, and then starts dropping off. However, as their sample consists of voluntary telecommuters, while ours consists of mandatory telecommuters, it seems probable that the drop off would be steeper among our sample. While it is hard to compare quantitative and qualitative data, our data does support this theory, with most of the informants expressing dissatisfaction with the lack of social contact, as well as a desire for a more balanced extent of telecommuting.

While the consensus opinion was that telecommuting had been a positive experience, there was one notable disagreement, from an informant who had found the experience negative. Since the agreement among the remaining informants on telecommuting being a positive experience was high, this was interesting to examine further. The informant stated that he had the option to telecommute in previous jobs but was negative to the concept and had therefore not utilized it. In addition, the informant was hired relatively recently, a fact that many other informants speculated would make it more challenging to telecommute. In addition, other informants expressed that they had a period where they were dissatisfied with telecommuting before coming to terms with it. Based on the collected data some possible explanations for this dissatisfaction are therefore personal preference, not yet having adapted, or being a new hire. The latter option is not supported by the other newly hired informant interviewed, whose opinion and experiences were more in line with the remaining informants.

Another learning aspect that was frequently mentioned was the importance of having the right equipment. Many expressed getting properly facilitated with screens, desks, and chairs as a turning point in their use of telecommuting. Both regular employees and, unsurprisingly, HR-personnel drew this forward as an important point. Back pains are one of the most common reasons for work absence in Norway, and therefore equipment such as desks and tables of high quality could be important factors for keeping employees healthy and satisfied (Sterud, 2012). Many informants also highlighted

equipment such as screens, which could have a beneficial effect on work productivity. This shows that in addition to broader learning points such as feasibility and impact on productivity, more specific, practical learning has also taken place. This shows that both first- and second-order learning as described by Smith (2002) has taken place.

A key point that we wanted to examine was whether demographics had an impact on organizational learning. Based on our own experiences we had an assumption that age could have an influence on learning for the individual employees, especially with digital tools having become a central part of telecommuting. However, as shown in section 4.3, there were no discernible differences between older and younger demographics. Many informants pointed out that demographic factors such as marital status could have an impact on the feasibility of successful telecommuting, but there was no indication within our sample that demographic factors had a discernible effect on learning.

Recalling Pearson and Clair's (1998) notion that successful learning outcomes is dependent on the ability to convert learning into effective changes, we see evidence that this is a process the case company is actively practicing. This is highlighted by informant number 14 in section 4.6, who mentions that the company is working on a blueprint on how to utilize the learning and experiences amassed over the latter year going forward, and how to transform this learning into action. This could be one of the keys to successful crisis handling, in the stage termed "learning from crisis" by Smith and Elliott (2007) or post-crisis internal outcome by Bundy et al. (2016).

When it comes to how challenges to successful crisis learning have been handled, we recall that Smith and Elliott (1993) identified failing to successfully implement actions based on learning as a barrier to organizational learning. Although it might be too early to adequately draw conclusions on this, we have outlined the implications on future use of telecommuting in chapter 5.3, and this goes more in depth on how the company appears to be tackling this challenge.

In their follow up article, Smith and Elliott (2007) took a deeper look into challenges creating barriers to organizational learning, and the two most common issues were rigidity of core beliefs and ineffective communication. Throughout our data collection phase, we saw that informants were willing to outline how their beliefs had changed throughout the last year, thus showing signs of fluidity in core beliefs related to telecommuting. Informants also outlined how their opinions were not only based on their own beliefs and experiences, but also through discussions with coworkers. This was especially evident within what was categorized as "management" among the job roles in

our sample. This suggests that there is effective communication in at least some parts of the organization. However, our sample did not include upper management, so this might not be indicative of the organization as a whole. However, among the interviewed sample there is evidence to suggest that these factors might not have a negative impact on the organizational learning within the organization.

5.2 Telecommuting as a working method

In addition to the specific findings linked to organizational learning, our study also touched on telecommuting in general. Recalling our research objectives, it was also relevant to compare our findings to the existing literature on telecommuting, to see how it contrasts or aligns with the existing literature on the topic.

According to Dutcher (2012), the type of tasks an employee does has an impact on productivity. We found similar concerns expressed by our informants. However, Dutcher's categorization of "dull" and "creative" tasks was not utilized by our informants. Rather they divided tasks into what could be considered "social" and "focused" tasks. They found that social tasks, in many (but not all) cases were more challenging, while focused tasks, such as document reading, were made easier. In general, our informants stated that their productivity while telecommuting was either unchanged or even slightly better while working from home, disagreeing with Morikawa's (2020) findings, and aligning with the findings of Rupietta and Beckmann (2018).

Cooper and Kurland (2002a) argue that professional isolation is a potential challenge within telecommuting. As seen in chapter 4, there is a high degree of agreement on this by our informants, although isolation in general was the most common issue. Cooper and Kurland (2002a) present the terms interpersonal networking, informal learning and mentoring as social factors telecommuters miss out on. All these terms were reflected in our informants' answers, and our findings clearly agree with Cooper and Kurlands findings. Throughout subchapter 4.5 informants touch on all these subjects. Informal learning and especially mentoring were the biggest concerns among the informants, and this might be related to the fact that most of the informants had worked at the company before the COVID-19 pandemic, meaning that interpersonal networks were already in place. Our findings also align with Kuruzovich et al.'s (2021) finding that extensive use of telecommuting has a negative effect on social exchange processes. However, in contrast to

Kuruzovich et al. (2021) we did not see evidence of decreased job satisfaction, organizational commitment, or job performance.

The informants also mirrored Bélanger's (1999) findings of barriers to utilizing telecommuting. Although our informants had not experienced these barriers themselves, they still reflected on how the absence of these barriers was key to telecommuting being a viable working method for them. One exception to this was the lack of equipment of home, which many struggled with early in the adoption process. However, through their company many was eventually able to get the equipment needed from their regular offices, thus removing this barrier.

5.3 Implications on future use

An important part of the learning process is putting the learning into practice, a process that March (1991) named exploitation. This is also reflected in Hubers (1991) definition of learning as "An entity learns if, through its processing of information, the range of its potential behaviors is changed" (p. 89). The processing of information is not enough, the information also must have real word consequences on behaviors. This section will present the implications that our data has on future feasibility of telecommuting.

While our informants were positive to continued utilization, both for them personally and for the company, there was little interest in continuing to work the same way as the previous year. Many, when asked what was needed to continue using telecommuting, stated that a 50/50 share between working from home and working would be optimal to them. This aligns somewhat by Baruch's (2000) findings that telecommuting should be balanced with normal work. However, while Baruch limits the effects of this to the employees view of themselves, our informants found that this was optimal in a broader sense, maybe especially when considering social factors.

Another key point for many informants was that they did not feel that telecommuting should occur at the cost of their usual office spaces. Many feared that the positive attitude to telecommuting they experienced within the company would lead to the company seeing a possibility to reduce costs by eliminating office spaces. Some of the informants explicitly stated that if this was the cost of using telecommuting, they would rather employ standard work practices full time. From a company view, this means that lowering rental costs should not necessarily be a goal when implementing telecommuting, as this could be met with resistance from employees.

While the employees themselves are positive to continued utilization, there also needs to be upsides for the company. From a company viewpoint, it seems that the major benefit will come from increased productivity and satisfaction. Companies might intend to introduce telecommuting as a cost-saving method, but our data shows that this may be in vain. Our sample expressed negativity to the idea of telecommuting leading to less office spaces, and many felt that from an employee viewpoint, the negative impact of this would be enough to offset the potential gains by telecommuting. In addition, many highlighted the importance of proper office utilities, including screens, desks, and chairs. If the company needs to be responsible for the purchase of these utilities, this might lead to a short-term increase in costs to optimally implement telecommuting for their employees. Thus, the potential benefits of increased productivity and potentially satisfaction must be weighed against the potential costs and extra work needed for implementation.

Our informants also highlighted drawbacks to telecommuting, mostly consisting of lack of social interaction, especially the more informal social interaction that will typically occur in a traditional office space. In addition, they also viewed some tasks as harder to perform while telecommuting, including training. Our informants seem to think that these challenges mostly stemmed from the way telecommuting has been implemented in the current situation, and that these issues will be alleviated or even completely solved through a more balanced implementation. Practitioners should however be aware that there might be challenges or drawbacks even in a more balanced implementation, that could be overshadowed by the drawbacks discovered in this study.

6 Conclusion

In this research project, we aimed to examine the impact the COVID-19 pandemic has had on organizational learning on telecommuting. This was done by examining literature on the topics of organizational crisis learning and telecommuting and conducting a single case study involving a Norwegian company, where we interviewed employees in different job roles (N=14). We saw clear evidence that the pandemic and consequent governmental restrictions had a drastic impact on the use of telecommuting, which again led to an acceleration in organizational learning. It seems likely that this will lead to a reorganization of how work is performed within the company.

6.1 Proposed contributions

This study contributes to several fields and discussions within literature. First, we believe that our study gives an insight into how one specific company, through the lens of its employees, has experienced the learning process when it comes to telecommuting during the COVID-19 pandemic. In addition, it contributes to the topic of telecommuting, and our findings support much of the existing research on the field (e.g., Heng et al., 2012; Dutcher, 2012; Golden and Veiga, 2016; Baruch, 2000; Kuruzovich, 2021). However, there were also examples of existing literature conflicting with our findings (e.g., Bélanger, 1999; Morikawa, 2020), which underlines the importance of situational differences. Due to the novelty of the COVID-19 pandemic and its consequences, this thesis provides understanding of a new scenario. For instance, none of the telecommuting literature written before 2020 considers mandatory telecommuting an option. This is reflected in Allen et al.'s (2015) original definition of telecommuting, where full-time telecommuting was excluded.

Last, our research also supports many pre-existing beliefs within organizational learning, especially considering the impact of crisis situations, and shows that this pre-existing research is also relevant to the COVID-19 pandemic. We see that the in line with the literature, the COVID-19 pandemic has acted as a catalyst for organizational learning, through breaking down pre-existing beliefs and assumptions.

6.2 Recommendations to practitioners

Based on our findings, we have found that telecommuting, as well as digital tools, are a viable working method even in a normal situation. According to our informants, a complete transition to

telecommuting is not recommended, but a more balanced approach to utilization of telecommuting in conjunction with more traditional work in an office location is desirable. This balanced approach is believed by the informants to allow for many of the upsides of telecommuting, including increased productivity, efficiency, and less time spent commuting, while reducing the downsides. These downsides primarily relate to the social interactions between co-workers and can be summed up as a decrease in what Cooper and Kurland (2002a) refers to as the *interpersonal networking*, *informal learning* and *mentoring* within the company. We also found that there was large resistance among our informants to reduce office space available, as they felt that telecommuting was a good *addition* to traditional working methods, it was not a good *substitute* to an office-based environment.

Practitioners might also keep in mind that the results of the study indicate that telecommuting might not be suitable for everyone. Our informants highlighted that their experiences were influenced by things such as job role, social situation and work tasks. Therefore, making telecommuting voluntary seems to be a more optimal solution than mandatory telecommuting. This is also reflected by the literature on telecommuting, where voluntary telecommuting is the usual described solution. Our informants highlighted that having the right equipment, including screens, chairs and desks were important for the quality of their telecommuting experience. This means that companies wishing to implement telecommuting might therefore wish to create systems for facilitating the right equipment for employees working from home before introducing the working method permanently. Once again, this is in thread with existing literature such as Bélanger (1999), who found lack of equipment as a potential barrier.

It bears repeating that these findings are based on only a single company, and practitioners and managers who want to utilize these findings might therefore be wise to spend time on examining how the topics of this dissertation has been experienced by their own employees. Hopefully, forthcoming literature on the topic will help substantiate these claims, making it more viable to put these findings into action.

6.3 Limitations

This study is restricted by the typical limitations of qualitative studies and should not and cannot be broadly generalized to other companies and contexts. The choice of a single case study, where only one company was examined further hinders the generalizability of the study (Mariotto, 2014), and unless proven otherwise it should be assumed that there is a potential for the findings to be unique to

the case company. There might potentially be large differences between companies in other countries, other industries, and even competitors within the same industry. In addition, the research has been carried forward by relatively inexperienced researchers, and this inexperience opens for the possibility of mistakes done throughout the research process. To alleviate this, we have focused on being as transparent as possible about the choices taken throughout the study (Yin, 2018).

Our sample strategy also opens the study up to criticism, as we allowed an external entity to draw our sample, based on our instructions. This could potentially lead to opportunism through using a biased sample. However, we have no suspicion of such opportunism occurring, and there would also be little to gain as the company is anonymized in the final paper and carries out its own investigation on the topic internally. The upside of this choice was that we got access to informants in well-informed positions, which we might otherwise have been unable to recruit. There is also no hiding that the choice made the research process easier for us.

6.4 **Future research**

An obvious suggestion for further research is replicating the study in other companies and contexts. This would increase the generalizability of the study considerably if the findings match or create the base for further discussions if there are large contrasts. We believe that although our exact study is not replicated, there will still be further research that is close enough that these processes may occur further.

In addition, it would be interesting to see how the case company potentially chooses to implement telecommuting in the future. There is a clear idea among our sample of how to best implement it and seeing if the company chooses to use these ideas, and the resulting consequences would be of great interest to us. Especially because we believe that, based on our theoretical base, the learning process is not successful until practical changes have occurred.

Furthermore, this study has only considered the white-collar workers within the company, as they were by nature the only ones able to utilize telecommuting. It could be possible that blue collar workers, who have not had this possibility, might have different viewpoints on the impact telecommuting has had on things such as productivity, cooperation, or the organization as a whole.

Reference list

Allen, Tammy D, Golden, Timothy D, and Shockley, Kristen M. (2015). *How Effective Is Telecommuting? Assessing the Status of Our Scientific Findings*. Psychological Science in the Public Interest, 16(2), 40-68.

Bartel. Caroline A., Wrzesniewski, Amy & Wiesenfeld, Batia M. (2012). *Knowing Where You Stand: Physical Isolation, Perceived Respect, and Organizational Identification Among Virtual Employees*. Organization Science (Providence, R.I.), 23(3), 743-757.

Baruch, Y. (2000). *Teleworking: benefits and pitfalls as perceived by professionals and managers.* New Technology, Work and Employment, 15(1), 34–49.

Basit, Tehmina. (2003). Manual or electronic? The role of coding in qualitative data analysis. Educational Research (Windsor), 45(2), 143-154.

Bélanger, France. (1999). *Workers' propensity to telecommute: An empirical study*. Information & Management, 35(3), 139-153.

Bonn, Ingrid, & Rundle-Thiele, Sharyn. (2007). *Do or die—Strategic decision-making following a shock event*. Tourism Management (1982), 28(2), 615-620.

Bundy, Jonathan, Pfarrer, Michael D, Short, Cole E, and Coombs, W. Timothy. (2016). *Crises and Crisis Management: Integration, Interpretation, and Research Development.* Journal of Management, 43(6), 1661-1692.

Chakrabarti, Sandip. (2018). *Does telecommuting promote sustainable travel and physical activity?* Journal of Transport & Health, 9, 19-33.

Chidlow, Agnieszka, Plakoyiannaki, Emmanuella, & Welch, Catherine. (2014). *Translation in cross-language international business research: Beyond equivalence*. Journal of International Business Studies, 45(5), 562-582.

Cooper, Cecily D, and Kurland, Nancy B. (2002a). *Telecommuting, professional isolation, and employee development in public and private organizations.* Journal of Organizational Behavior, 23(4), 511-532.

Curtis, John J. (2011). *Judgmental sampling*. Transplantation, 91(12), 1320.

Dahlstrom, Timothy R. (2013). *Telecommuting and Leadership Style.* Public Personnel Management, 42(3), 438-451.

Denzin, N., & Lincoln, Y. (1994). *Handbook of qualitative research*. Thousand Oaks, Calif: Sage.

Dingel, Jonathan I, & Neiman, Brent. (2020). *How many jobs can be done at home?* Journal of Public Economics, 189, 104235.

Dominic Elliott, and Denis Smith. (1993). *Football stadia disasters in the United Kingdom: Learning from tragedy?* Industrial and Environmental Crisis Quarterly, 7(3), 205-229.

Dowling, Robyn, Lloyd, Kate, & Suchet-Pearson, Sandie. (2016). *Qualitative methods 1.* Progress in Human Geography, 40(5), 679-686.

Dutcher, G. E. (2012). *The effects of telecommuting on productivity: An experimental examination. The role of dull and creative tasks.* Journal of Economic Behavior and Organization, 84(1), 355-363.

Faulkner, B. (2001). *Towards a framework for tourism disaster management.* Tourism Management (1982), 22(2), 135-147.

Felstead, Alan, and Henseke, Golo. (2017). *Assessing the growth of remote working and its consequences for effort, well-being and work-life balance.* New Technology, Work, and Employment, 32(3), 195-212.

Fienberg, S.E. (1977). *The Collection and Analysis of Ethnographic Data in Educational Research*. Anthropology & Education Quarterly, 8(2), 50-57.

Given, L. M. (2008). *The SAGE encyclopedia of qualitative research methods* (Vols. 1-0). Thousand Oaks, CA: SAGE Publications, Inc. doi: 10.4135/9781412963909

Golden, Timothy D, and Veiga, John F. (2016). *The Impact of Extent of Telecommuting on Job Satisfaction: Resolving Inconsistent Findings.* Journal of Management, 31(2), 301-318.

Guba, E.G. and Lincoln, Y.S. (1989). *Fourth Generation Evaluation*, Newbury Park, CA: Sage.

Harpaz, I. (2002). *Advantages and disadvantages of telecommuting for the individual, organization and society*. Work Study, 51(2), 74-80.

Haunschild, Pamela R, and Sullivan, Bilian Ni. (2002). *Learning from Complexity: Effects of Prior Accidents and Incidents on Airlines' Learning*. Administrative Science Quarterly, 47(4), 609-643.

Heng, T. B., Hooi, S.C., Liang, Y. Y., Othma, A., and San, O. T. (2012). *Telecommuting for Business Continuity in a Non-profit Environment*. Asian Social Science; Vol. 8, No. 12 (Canadian Center of Science and Education).

Huber, G. P. (1991). *Organizational Learning: The Contributing Processes and the Literatures*. Organization Science (Providence, R.I.), 2(1), 88-115.

Hyett, N., Kenny, A., & Dickson-Swift, V. (2014). *Methodology or method? A critical review of qualitative case study reports*. International Journal of Qualitative Studies on Health and Well-being, 9(1), 23606.

Lo Iacono, Valeria, Symonds, Paul, & Brown, David H.K. (2016). Skype as a Tool for Qualitative Research Interviews. Sociological Research Online, 21(2), 103-117.

Johannessen, A., Tufte, P.A., Christoffersen, L. (2016). *Introduksjon til samfunnsvitenskapelig metode* (5th edition.). Abstrakt forlag.

Johanson, D. (2013) 'Beyond budgeting from the American and Norwegian perspectives: the embeddedness of management models in corporate governance systems',

Kathleen M. Eisenhardt, & Melissa E. Graebner. (2007). *Theory Building from Cases: Opportunities and Challenges.* Academy of Management Journal, 50(1), 25-32.

Kothari, C.R. (2009). *Research Methodology*. Daryaganj: New Age International.

Kuchinke, K. P. (1995). *Managing learning for performance.* Human Resource Development Quarterly, 6(3), 307.

Kurland, Nancy B, and Cooper, Cecily D. (2002b). *Manager control and employee isolation in telecommuting environments.* Journal of High Technology Management Research, 13(1), 107-126.

Kuruzovich, J., Paczkowski, W. "Patch", Golden, T. D., Goodarzi, S., & Venkatesh, V. (2021). *Telecommuting and job outcomes: A moderated mediation model of system use, software quality, and social Exchange*. Information & Management, 58(3), 103431.

Lampel, Joseph, Shamsie, Jamal, and Shapira, Zur. (2009). *Experiencing the Improbable: Rare Events and Organizational Learning*. Organization Science, 20(5), 835-845.

Levitt, B, & March, J. G. (1988). Organizational Learning. Annual Review of Sociology, 14(1), 319-340.

Liu, S. (2020, 19th October), *Number of daily active users (DAU) of Microsoft Teams worldwide as of April 30. 2020*, Statista.com, retrieved 22.11.2020 from https://bit.ly/3fpGwkw

McHugh M. L. (2012). *Interrater reliability: the kappa statistic*. Biochemia medica, 22(3), 276–282.

Morikawa, M. (2020). *COVID-19, teleworking, and productivity*.VoxEU.org. Retrieved from https://voxeu.org/article/covid-19-teleworking-and-productivity.

Myers, M.D. (2008). *Qualitative Research in Business & Management*. SAGE Publications

O'Connor, C., & Joffe, H. (2020). *Intercoder Reliability in Qualitative Research: Debates and Practical Guidelines*. International Journal of Qualitative Methods, 19, 160940691989922.

Osiyevskyy, Oleksiy, Shirokova, Galina, and Ritala, Paavo. (2020). *Exploration and exploitation in crisis environment: Implications for level and variability of firm performance.* Journal of Business Research, 114, 227-239.

Pearson, Christine M, and Clair, Judith A. (1998). *Reframing Crisis Management.* The Academy of Management Review, 23(1), 59-76.

Rupietta, Kira and Beckmann, Michael. (2018). *Working from Home.* Schmalenbach Business Review, 70(1), 25-55.

Sinkovics, Rudolf R, Penz, Elfriede, & Ghauri, Pervez N. (2008). *Enhancing the Trustworthiness of Qualitative Research in International Business*. Management International Review, 48(6), 689-713.

Smith, D. (2002). *Not by Error, But by Design—Harold Shipman and the Regulatory Crisis for Health Care*, Public Policy and Administration 17(4): 55–74

Smith, Denis, and Elliott, Dominic. (2007). *Exploring the Barriers to Learning from Crisis*. Management Learning, 38(5), 519-538.

Stake, R. (1995). *The art of case study research*. Thousand Oaks, Calif: Sage.

Sterud T, Tynes T. *Work-related psychosocial and mechanical risk factors for low back pain: a 3-year follow-up study of the general working population in Norway*. Occup Environ Med. 2013 May;70(5):296-302. doi: 10.1136/oemed-2012-101116. Epub 2013 Jan 15. PMID: 23322920.

Turner, B. A. (1976). *The Organizational and Interorganizational Development of Disasters*. Administrative Science Quarterly, 21(3), 378-397.

Wang, J. (2008*). Developing Organizational Learning Capacity in Crisis Management*. Advances in Developing Human Resources, 10(3), 425-445.

Wang, W., Albert, L., & Sun, Q. (2020). *Employee isolation and telecommuter organizational commitment*. Employee Relations, 42(3), 609-625.

Appendix 1: Summary table – literature search process

INPUT (SEARCH)	D.B.	AUTHOR(S)	ARTICLE NAME	YEAR	THEME
MAIN SEARCH 1 (TELECOMMUTING W. SYNONYMS)	Sage	Allen, TammyD, Golden, Timothy D, & Shockley, Kristen M.	*How Effective Is telecommuting? Assessing the Status of Our Scientific Findings.*	2015	Telecommuting
MAIN SEARCH 1 (TELECOMMUTING W. SYNONYMS)	JSTOR	Bartel. Caroline A., Wrzesniewski, Amy & Wiesenfeld, Batia M	*Knowing Where You Stand: Physical Isolation, Perceived Respect, and Organizational Identification Among Virtual Employees*	2012	Telecommuting
MAIN SEARCH 1 (TELECOMMUTING W. SYNONYMS)	Wiley	Baruch, Y.	*Teleworking: benefits and pitfalls as perceived by professionals and managers.*	2000	Telecommuting
MAIN SEARCH 1 (TELECOMMUTING W. SYNONYMS)	Science Direct	Bélanger, France	*Workers' propensity to telecommute: An empirical study.*	1999	Telecommuting
MAIN SEARCH 2 (ORGANIZATIONAL LEARNING AND CRISIS MANAGEMENT W. SYNONYMS)	ScienceDirect	Bonn, Ingrid, & Rundle-Thiele, Sharyn	*Do or die— Strategic decision-making following a shock event.*	2007	Crisis learning
MAIN SEARCH 2 (ORGANIZATIONAL LEARNING AND CRISIS MANAGEMENT W. SYNONYMS)	Sage	Bundy, Jonathan, Pfarrer, Michael D, Short, Cole E, & Coombs, W. Timothy	*Crises and Crisis Management: Integration, Interpretation, and Research Development*	2016	Crisis management
MAIN SEARCH 1 (TELECOMMUTING W. SYNONYMS)	Science Direct	Chakrabarti, Sandip	*Does telecommuting promote sustainable travel and physical activity?*	2018	Telecommuting
MAIN SEARCH 1 (TELECOMMUTING W. SYNONYMS)	JSTOR	Cooper, Cecily D, & Kurland, Nancy B.	*Telecommuting, professional isolation, and employee development in*	2002a	Telecommuting

			public and private organizations		
MAIN SEARCH 1 (TELECOMMUTING W. SYNONYMS)	Sage	Dahlstrom, Timothy R	*Telecommuting and Leadership Style*	2013	Telecommuting
MAIN SEARCH 1 (TELECOMMUTING W. SYNONYMS)	Science Direct	Dingel, Jonathan I, & Neiman, Brent	*How many jobs can be done at home?*	2020	Telecommuting
MAIN SEARCH 2 (ORGANIZATIONAL LEARNING AND CRISIS MANAGEMENT W. SYNONYMS)	JSTOR	Dominic Elliott, & Denis Smith	*Football stadia disasters in the United Kingdom: Learning from tragedy?*	1993	Crises, crisis learning
MAIN SEARCH 1 (TELECOMMUTING W. SYNONYMS)	ScienceDirect	Dutcher, E. G.	*The effects of telecommuting on productivity: An experimental examination. The role of dull and creative tasks.*	2012	Telecommuting
MAIN SEARCH 2 (ORGANIZATIONAL LEARNING AND CRISIS MANAGEMENT W. SYNONYMS)	ScienceDirect	Faulkner, B.	*Towards a framework for tourism disaster management.*	2001	Tourism management, disasters
MAIN SEARCH 1 (TELECOMMUTING W. SYNONYMS)	ScienceDirect	Felstead, Alan, & Henseke, Golo.	*Assessing the growth of remote working and its consequences for effort, well-being and work-life balance.*	2017	Telecommuting
MAIN SEARCH 1 (TELECOMMUTING W. SYNONYMS)	Sage	Golden, Timothy D, & Veiga, John F.	*The Impact of Extent of Telecommuting on Job Satisfaction: Resolving Inconsistent Findings.*	2016	Telecommuting
MAIN SEARCH 1 (TELECOMMUTING W. SYNONYMS)	Emerald	Harpaz, I.	*Advantages and disadvantages of telecommuting for the individual, organization and society.*	2002	Telecommuting
MAIN SEARCH 2 (ORGANIZATIONAL LEARNING AND CRISIS MANAGEMENT W. SYNONYMS)	Sage	Haunschild, Pamela R, & Sullivan, Bilian Ni.	*Learning from Complexity: Effects of Prior Accidents and Incidents on Airlines' Learning.*	2002	Disasters, organizational learning

MAIN SEARCH 1 (TELECOMMUTING W. SYNONYMS)	ResearchGate	Heng, T. B., Hooi, S.C., Liang, Y. Y., Othma, A., and San, O. T	*Telecommuting for Business Continuity in a Non-profit Environment.*	2012	Telecommuting
MAIN SEARCH 2 (ORGANIZATIONAL LEARNING AND CRISIS MANAGEMENT W. SYNONYMS)	JSTOR	Huber, G. P.	*Organizational Learning: The Contributing Processes and the Literatures.*	1991	Organizational learning
MAIN SEARCH 2 (ORGANIZATIONAL LEARNING AND CRISIS MANAGEMENT W. SYNONYMS)	Social Science	Kuchinke, K. P.	*Managing learning for performance.*	1996	Organizational learning
MAIN SEARCH 1 (TELECOMMUTING W. SYNONYMS)	ScienceDirect	Kurland, Nancy B, & Cooper, Cecily D.	*Manager control and employee isolation in telecommuting environments.*	2002b	Telecommuting
MAIN SEARCH 1 (TELECOMMUTING W. SYNONYMS)	Science Direct	Kuruzovich, J., Paczkowski, W. "Patch", Golden, T. D., Goodarzi, S., & Venkatesh, V	*Telecommuting and job outcomes: A moderated mediation model of system use, software quality, and social Exchange.*	2021	Telecommuting
MAIN SEARCH 2 (ORGANIZATIONAL LEARNING AND CRISIS MANAGEMENT W. SYNONYMS)	JSTOR	Lampel, Joseph, Shamsie, Jamal, and Shapira, Zur.	*Experiencing the Improbable: Rare Events and Organizational Learning*	2009	Organizational learning
ADDITIONAL LITERATURE	JSTOR	Levitt, B, & March, J. G.	*Organizational Learning.*	1988	Organizational Learning.
MAIN SEARCH 2 (ORGANIZATIONAL LEARNING AND CRISIS MANAGEMENT W. SYNONYMS)	ScienceDirect	Osiyevskyy, Oleksiy, Shirokova, Galina, & Ritala, Paavo.	*Exploration and exploitation in crisis environment: Implications for level and variability of firm performance.*	2020	Organizational crisis learning
MAIN SEARCH 2 (ORGANIZATIONAL LEARNING AND CRISIS MANAGEMENT W. SYNONYMS)	JSTOR	Pearson, Christine M, & Clair, Judith A.	*Reframing Crisis Management.*	1998	Crisis management
MAIN SEARCH 1 (TELECOMMUTING W. SYNONYMS)	SpringerLink	Rupietta, Kira & Beckmann, Michael.	*Working from Home.*	2018	Telecommuting

MAIN SEARCH 2 (ORGANIZATIONAL LEARNING AND CRISIS MANAGEMENT W. SYNONYMS)	Sage	Smith, Denis	*Not by Error, But by Design—Harold Shipman and the Regulatory Crisis for Health Care*	2002	Crisis learning
MAIN SEARCH 2 (ORGANIZATIONAL LEARNING AND CRISIS MANAGEMENT W. SYNONYMS)	Sage	Smith, Denis, & Elliott, Dominic.	*Exploring the Barriers to Learning from Crisis.*	2007	Crisis learning
MAIN SEARCH 1 (TELECOMMUTING W. SYNONYMS)	Research Gate	Teh Boon Heng, Soh Chin Hooi, Yan Yap Liang, Azizie Othma & Ong Tze San	*Telecommuting for Business Continuity in a Non-profit Environment.*	2012	Telecommuting
MAIN SEARCH 2 (ORGANIZATIONAL LEARNING AND CRISIS MANAGEMENT W. SYNONYMS)	JSTOR	Turner, B. A.	*The Organizational and Interorganizational Development of Disasters.*	1976	Crisis learning
MAIN SEARCH 2 (ORGANIZATIONAL LEARNING AND CRISIS MANAGEMENT W. SYNONYMS)	Sage	Wang, J.	*Developing Organizational Learning Capacity in Crisis Management.*	2008	Organizational learning
MAIN SEARCH 1 (TELECOMMUTING W. SYNONYMS)	Emerald	Wang, W., Albert, L., & Sun, Q	*Employee isolation and telecommuter organizational commitment.*	2020	Telecommuting

Appendix 2: Interview guide

Generell introduksjon

- Presentere oss selv, oppgaven og oppgavens formål.
- Gjenta sentrale opplysninger fra informasjonsskriv, inkludert rettigheter, kontaktpersoner og tema.
- Gi intervjuobjekt mulighet til å stille spørsmål dersom det er noe som er usikkert/uklart.

Demografiske spørsmål
- Alder, kjønn. Opplysningene blir lagret i kodet dokument, separat fra innspilling og transkribering.

Introduksjonsspørsmål
- **Start opptak**
- Kan du beskrive din nåværende rolle i bedriften?
- Typiske arbeidsoppgaver
  - Foregår arbeidet individuelt eller i grupper? Er gruppene faste eller varierende?
  - Hvor lenge har du vært i nåværende rolle?
- Hvilke erfaringer hadde du med bruk av hjemmekontor før mars 2020?

Digitale verktøy
- I hvilken grad har bedriften din benyttet seg av hjemmekontor siden mars 2020?
- Brukte dere digitale kommunikasjons og samarbeidsprogrammer som Zoom, Microsoft Teams, Skype, Google Hangouts og lignende, isåfall hvilke?
- Beskriv læringsprosessen for verktøyene som er tatt i bruk.
- Har dere fått noen form for formell opplæring i dette/disse programmet/ene?

Bruk av hjemmekontor under COVID-19 pandemien:
- Hvordan synes du det var komme igang med bruken av Hjemmekontor.
- Hvilke erfaringer/lærdommer tar du med deg fra bruk av hjemmekontor under Covid-19?
  - Evt. hvordan har læringsprosessen vært for hjemmekontor totalt sett kontra kun de digitale verktøyene?
  - Interaktive verktøy?
- Opplevde du at bruken av hjemmekontor påvirket resultatet av arbeidet ditt på noen måte? (koble mot stilling)
- Hva skal til for at du ønsker å fortsette å bruke hjemmekontor, også etter at pandemien er over?

Sosiale faktorer
- I hvilken grad har bruken av hjemmekontor påvirket arbeidsmiljøet og samarbeid med dine kollegaer?
- Har bedriften hatt sosiale arrangementer over digitale verktøy/sosiale media?

Opplyse om antall spørsmål som gjenstår (4)

Læringsutbytte
- Hvordan har introduksjonen til nye verktøy det siste året skilt seg ut fra tidligere opplevelser?

- Har erfaringene dine med hjemmekontor gjort det mer aktuelt å benytte seg av nye arbeidsmetoder og/eller digitale verktøy i fremtiden?
- Har bedriften eller du som ansatt tatt med seg andre lærdommer fra Koronapandemien?
  - Dette kan være innenfor andre arbeidsmetoder som remote meetings, eller mer generelt.

Avsluttende spørsmål:
- Totalt sett, hvordan har du opplevd bruken av hjemmekontor det siste året? Har du noe å tilføye?

Avslutning
- Er det noen spørsmål du har til oss før vi runder av?
- Opplyse om at dersom informanten ønsker å tilføye noe de kommer på i ettertid kan de ta kontakt.
- Takke høflig for at informanten tok seg tid til å besvare spørsmålene våre.

Appendix 3: NSD receipt

Melding

28.01.2021 16:09

Behandlingen av personopplysninger er vurdert av NSD. Vurderingen er:

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 28.01.2021, samt i meldingsdialogen mellom innmelder og NSD. Behandlingen kan starte.