

Luis Delgado

Academics Working from Home

Experiences & Challenges to Academic Work

Master's thesis in Project Management

Supervisor: Bjørn Otto Elvenes

June 2022

Luis Delgado

Academics Working from Home

Experiences & Challenges to Academic Work

Master's thesis in Project Management

Supervisor: Bjørn Otto Elvenes

June 2022

Norwegian University of Science and Technology

Faculty of Economics and Management

Dept. of Industrial Economics and Technology Management



NTNU

Kunnskap for en bedre verden



Norwegian University of
Science and Technology

DEPARTMENT OF INDUSTRIAL ECONOMICS AND
TECHNOLOGY MANAGEMENT

TIØ4920 - PROJECT MANAGEMENT, MASTER'S THESIS

**Academics Working from Home –
Experiences & Challenges to Academic
Work**

Author:

Luis Ramiro Delgado

Supervisor:

Bjørn Otto Elvenes

June, 2022

Abstract

Work From Home (WFH) is an arrangement that became commonplace during the COVID-19 pandemic. Now that the pandemic is drawing to a close, employees in many industries have not been eager to flock back to their traditional work environments, and it seems this work arrangement is here to stay. Literature on the topic has paid little attention to the experience of academics working from home. To contribute to this scarce literature, the purpose of this exploratory research will be twofold: to investigate and understand the main challenges that academics face while working from home, and to determine whether academics in soft and hard disciplines experience WFH in the same manner. In this qualitative study, data was collected from eight academics from seven of the nine faculties at the Norwegian University of Science and Technology (NTNU); this data was acquired through semi-structured interviews via Microsoft Teams. This approach provided candid accounts regarding research, digital teachings, and WFH as a whole. The interview data was transcribed and coded and the findings were compared with existing literature on the topic. The findings indicate that the main challenges identified by academics include: (1) lack of a dedicated work space at home, (2) trying to maintain a work/life balance, (3) professional isolation, (4) increased workload, (5) lack of organizational support, (6) proliferation of digital communication. As for whether academics in soft and hard disciplines experience WFH in the same manner, the findings indicate that scholars in soft fields experience better research productivity and perceive professional isolation as a bigger challenge compared to their counterparts in hard disciplines. In terms of digital teaching, academics in both soft and hard disciplines agreed that teaching from home was an unengaging and vapid experience. Future research should focus on understanding academics based on their tasks rather than on their field of study, as academic disciplines are not homogeneous and an academic's specific duties are a bigger determinant of how they experience this work arrangement.

Table of Contents

Abstract	i
List of Figures	v
List of Tables	v
Acronyms	v
1 Introduction	1
1.1 Paper's Structure	2
2 Background & Theory	2
2.1 Remote Work, Telework, and Everything in Between	2
2.2 Soft versus Hard Disciplines	3
2.3 The COVID-19 Pandemic in the Norwegian Context	5
2.4 Working From Home	6
2.4.1 Home & Family Dimension	7
2.4.2 Individual Dimension	8
2.4.3 Job Dimension	10
2.4.4 Organization Dimension	12
3 Method	15
3.1 Research Strategy	15
3.2 Research Design	16
3.3 Sampling	17
3.4 Interview Guide	18
3.5 Ethical Considerations	19
3.5.1 Harm to Participants	20
3.5.2 Informed Consent	20

3.5.3	Invasion of Privacy	20
3.5.4	Deception	21
3.5.5	Local Rules and Regulations	21
3.6	Data Collection	21
3.7	Data Analysis	23
4	Results	25
4.1	Institution Background	25
4.2	Home & Family Dimension	27
4.2.1	Work-Space at Home	27
4.2.2	Work/Life Balance	27
4.3	Individual Dimension	28
4.3.1	Professional Isolation	28
4.4	Job Dimension	30
4.4.1	Overwork	30
4.5	Organization Dimension	31
4.5.1	Organizational Implementation & Support	31
4.5.2	Meeting Proliferation	32
4.6	Soft versus Hard Disciplines	33
4.6.1	Research	33
4.6.2	Teaching	34
4.7	Other Issues	36
5	Discussion	36
5.1	Home & Family Dimension	36
5.2	Individual Dimension	37
5.3	Job Dimension	39
5.4	Organization Dimension	40

5.5	Soft versus Hard Disciplines	43
5.5.1	Research	43
5.5.2	Teaching	45
6	Conclusion	46
6.1	Practical Implications	47
6.1.1	General Implications	47
6.1.2	Project Management Implications	48
6.2	Limitations of the Study & Future Research	48
6.3	Concluding Remarks	50
	Bibliography	51
7	Appendix	57
A	Interview Guide	57
B	Consent Form	59
C	NSD Assessment	63

List of Figures

1	Four Elements for Home Working (Baruch and Nicholson, 1997)	7
2	Example of Coding Structure	24

List of Tables

1	Clustering of Academic Task Areas in Three Dimensions (Biglan, 1973b)	4
2	Sampling of Interviewees	23

Acronyms

ICT Information and Communications Technology. 3, 14, 15, 26, 41, 42

ILO International Labor Organization. 3

NSD Norwegian Center for Research Data. 21

NTNU Norwegian University of Science and Technology. i, 2, 17, 22, 25, 26, 28, 31, 32, 39–43, 47, 49

OECD Organization for Economic Co-operation and Development. 15

UNESCO United Nations Educational, Scientific, and Cultural Organization. 5

WFH Work From Home. i, 1–3, 5–15, 17, 26–34, 36–49

1 Introduction

For generations, ‘going to work’ meant carrying out work duties in a conventional work setting. In recent years, however, this paradigm has shifted, and the number of people carrying out their work responsibilities from the comfort of their own home has increased. The number of people with this type of work arrangement reached an all-time high in early 2020 due to the outbreak of the COVID-19 pandemic. During this time, millions of people around the globe were forced, practically overnight, to work from their homes. According to a survey by Eurofound, as many as 50% of the population of some European countries worked exclusively from home during the early stages of the pandemic (Eurofound, 2020).

Work From Home (WFH) is a very attractive work arrangement with several advantages generally cited; benefits such as no need to commute, increased flexibility in terms of work and personal responsibilities, and increased employee productivity are among those mentioned in the literature. It is no wonder then why the number of people working from home had been steadily climbing even before the COVID-19 pandemic (Milasi et al., 2020). However, despite the numerous benefits, WFH arrangements have their fair share of challenges, and the COVID-19 pandemic put a spotlight on many of them.

A rapidly growing body of literature on the topic of WFH has focused on the general challenges of this work arrangement. There has been, however, limited attention paid to how academics experience WFH arrangements. This is a bit of an oversight seeing as, during the pandemic, the educational sector had the highest rate of employees working from home (Eurofound, 2020). The purpose of this paper is to contribute to the scarce literature regarding academics in WFH arrangements, and identify and understand the main challenges that academics face while working from home. However, not all jobs and tasks are suitable for WFH (Allen et al., 2015), and in the case of academia, not all academic fields are cut from the same cloth. Therefore, this study will also seek to find whether scholars from different academic disciplines experience WFH in the same manner, and if not, to understand how they might diverge.

The importance of this research lies in the fact that, despite the effects of the pandemic winding down and many countries going back to normal, employees have not been keen on returning to their usual work environments. There has been a trend towards making WFH a more permanent arrangement in many organizations (Hayes et al., 2020). The education sector is no exception, as more and more academic institutions are allowing their staff to work away from the conventional office (Widar et al., 2022). Therefore, with WFH not being the ephemeral phenomenon that many believed it to be at first, it might now be a good idea to look into the research and teaching experience of academics while working from home.

This exploratory study was carried out using a qualitative research design. The COVID-19 pandemic offered a unique opportunity to explore the challenges that academics face while working

from home. Semi-structured interviews were used to investigate the experiences of academics; and I focused strictly on academics working at the Norwegian University of Science and Technology (NTNU). In order to acquire an understanding of the university as a whole, the selected participants come from several of the different faculties that make up the institution. Moreover, a coding process was used to analyse and sort the interview data.

1.1 Paper's Structure

The present study consists of the following six sections:

1. **Introduction** — Presentation of the purpose of the study.
2. **Background & Theory** — Definition of important concepts and contextualization of the study.
3. **Method** — Detailed description of how the study was carried out.
4. **Results** — Presentation of the empirical data found during the study.
5. **Discussion** — Analysis and interpretation of the findings.
6. **Conclusion** — Concluding remarks, limitations, and suggestions of future areas of research.

2 Background & Theory

The purpose of this section is to define and give an overview of WFH as a working arrangement, to lay the groundwork for differentiating between academic disciplines, to give some insight into the context of the study, and to identify the common challenges of this work arrangement reported in the literature.

2.1 Remote Work, Telework, and Everything in Between

There are a myriad of terms used to describe work arrangements where the employee carries out their work duties outside of the traditional work environment. Terms such as *telework*, *telecommute*, and *work from home*, are among the oft-used terms in the literature used to describe remote working arrangements. Moreover, there is no agreed upon definition of working remotely in the literature (Harpaz, 2002; Allen et al., 2015; Aguilera et al., 2016; Carillo et al., 2021;).

The term *telework* was first coined by Jack Niles back in the 1970's and it was used to refer to employees who worked from home or from some remote location (Avery and Zabel, 2000). This definition is similar to Weijers et al. (1992), who defines *telework* as work that is separated

from the employer’s location, as a result of the application of Information and Communications Technology (ICT). This is consistent with Feldman and Gainey (1997), who define *telecommuting* as the use of telecommunication technologies to give employees the ability to work away from the company premises. In the latter two definitions, ICT is highlighted as a key element, and for good reason: technology is what makes working remotely possible. Other definitions encompass many remote working arrangements under one term; for example Braun and Schill (2005), who state that *telework* is an umbrella term for a wide range of work arrangements with variable locations.

From the definitions above, the work location and the use of ICT come into focus and emerge as important factors in this type of work arrangement. The first factor, the default place of work, refers to the location where work is expected to be performed (de Godoy et al., 2021). Generally, the default place of work refers to the site, premises, or facilities of the employer; however, when working remotely, the actual setting where work is performed can vary quite a bit. Pérez et al. (2002) distinguish between three types of telework based on the employees’ location: *home-based telework*, *satellite offices*, and *mobile working*. This goes along the same vein as Kurland and Bailey (1999) who mention four types of telework: *home-based telecommuting*, *satellite offices*, *neighborhood work centers*, and *mobile working*. As for the second factor, the use of ICT, it simply refers to the use of communication technologies such as phone, e-mail, video conferencing applications (e.g., Zoom, Microsoft Teams, etc.), online messaging services, to perform the work remotely. This factor is generally taken as a given, seeing as it is one of the fundamental feature that enables remote working arrangements.

All of the above goes to show that the literature is filled with overlapping terms that are often used interchangeably by researchers. Having said this, an important characteristic that makes a difference when speaking about the topic of remote work, is the actual location where the work is performed. For the purposes of this paper, I will focus strictly on remote work carried out from the employee’s home/residence, that is, WFH. It might seem trite, but I believe that it is important to define WFH as it is a term that will be regularly used in this paper. To do so, I will borrow the definition from the International Labor Organization (ILO), who define WFH as “work that takes place fully or partly within the worker’s own residence” (ILO, 2020, p. 06).

Now, before taking an in-depth look into WFH and its common challenges, I will first address how academic disciplines will be differentiated in this paper; furthermore, I will discuss the context in which the study will be carried out.

2.2 Soft versus Hard Disciplines

One of the goals of this study is to determine whether academics from different disciplines experience WFH in the same manner, and if not, to see how their experiences might vary. To do so, the first step is to be clear about what is meant by ‘academics’ or ‘scholars’, two terms that will be

used extensively throughout this paper. Simply put, these terms refer to individuals who carry out research and teaching activities at the higher education level in academic institutions. The second step is to differentiate between academic disciplines. I drew from the classic taxonomy of academic disciplines proposed by Biglan (1973a). In his classification, Biglan distinguishes academic disciplines along three dimensions: *soft/hard*, *pure/applied*, & *life/nonlife* (Biglan, 1973a).

The *soft/hard* cluster concerns the varying degrees of paradigm consensus among members in a field. By “paradigm”, Biglan (1973a) refers to a body of theory that is agreed upon by all the members of a discipline. In essence, hard disciplines have a high degree of consensus, whereas soft disciplines have a low degree of consensus; meaning that the latter will be open to many different approaches and interpretations (Doberneck and J. H. Schweitzer, 2017). The *pure/applied* cluster refers to the pure fields being unconcerned with the practical application to problems, unlike the applied fields (Biglan, 1973a). Lastly, the *life/nonlife* cluster refers to the distinction between disciplines that are concerned with living systems and those that deal with inanimate objects (Biglan, 1973a). Biglan’s classification of academic disciplines is shown in Table 1 below:

Task area	Hard		Soft	
	Nonlife system	Life system	Nonlife system	Life system
Pure	Astronomy Chemistry Geology Math Physics	Botany Entomology Microbiology Physiology Zoology	English German History Philosophy Russian Communications	Anthropology Political science Psychology Sociology
Applied	Ceramic engineering Civil engineering Computer science Mechanical engineering	Agronomy Dairy science Horticulture Agricultural economics	Accounting Finance Economics	Educational administration and supervision Secondary and continuing education Special education Vocational and technical education

Table 1: Clustering of Academic Task Areas in Three Dimensions (Biglan, 1973b)

Biglan’s (1973) classification of academic disciplines will be used in this paper to distinguish between the different academic disciplines of the participants. Seeing as I will be taking an exploratory stance in this study, I will only distinguish between hard and soft disciplines, in order to simplify the analysis. I posit that categorizing the academics in this study along these two dimensions should draw a clear line between different fields of study. I do, however, acknowledge that there might be value in examining differences and coincidences between the two remaining clusters, which could be seen as a limitation of the present study.

2.3 The COVID-19 Pandemic in the Norwegian Context

In early 2020, in the absence of a vaccine or effective treatment for those infected by the COVID-19 virus, many governments across the globe put strict measures in place to limit the social contact of the population, and thus the spread of the virus. This led to WFH becoming widespread in many organizations as a way of ensuring the continued delivery of critical services (Milasi et al., 2020). In this regard, academic institutions were no exception.

According to the United Nations Educational, Scientific, and Cultural Organization (UNESCO), the COVID-19 pandemic had an unprecedented impact on education, disrupting educational systems across the globe. In response to the ongoing situation, universities cancelled in-person teaching and forced faculty members and students to carry out their duties through digital platforms such as Zoom and Microsoft Teams.

Speaking specifically about Norway, a lockdown at a national level was announced on March 12th 2020 (Conyon et al., 2020). The strict lockdown policies implemented by the Norwegian government included the widespread closure of businesses and schools alike, as well as strict travel restrictions (Conyon et al., 2020). Despite Norway having dealt with the fallout of the pandemic better than most (Da et al., 2022), the impact was felt by academics all the same.

In Norway, academics were affected heavily by the lock-downs that came as a result of the outbreak of the COVID-19 pandemic. The immediate consequence was the loss of access to laboratories and the cancellation of planned field work, which for many, made it impossible to carry out research (Grande, 2020). The consequence of this was that a lot of research was severely delayed and ended up far behind its original schedule (Grande, 2021). Additionally, collaboration between academics was naturally hindered by the pandemic; in addition to not being able to meet physically at the office, most international conferences and workshops, which are crucial to scientific collaboration, were cancelled, postponed, or carried out virtually (Grande, 2021).

Staying on the topic of Norway, it is important to talk about the cultural context in which the study is being carried out, because as Warner-Søderholm (2012) points out: culture matters in academic research, and the Scandinavian culture offers some distinctive aspects. To get a general idea of the context of academics in Norway Hofstede et al.'s (1980) seminal paper can be of use; Hofstede et al. argue that people have “mental programs” developed through their specific contexts. They originally proposed four work related cultural dimensions: *Power Distance*, *Uncertainty Avoidance*, *Individualism/Collectivism*, and *Masculinity/Femininity*; a fifth dimension called *Confucian Work Dynamic* was proposed later on. These will not be discussed in depth, however, the main take-aways from these cultural dimensions are that Hofstede et al. claim that the Norwegian culture is characterized by being independent; in organizations, power is decentralized and management relies on the experience of their team members. Furthermore, they mention that in Norwegian culture, the lines between work and private life are clearly demarcated (Hofstede Insights, 2022).

Taken together, these cultural traits can play a role in the effectiveness of WFH, which will be discussed in more detail in Section 2.4 (Working From Home).

At the time of writing, the pandemic has seemingly drawn to a close in Norway, however, this is not the case everywhere in the world. While early on in the pandemic many people, perhaps naively, believed that working from home would be a temporary solution to the ongoing crisis. As we now know, this turned out to be quite the opposite. Baker (2020) found that over 80% of companies planned to allow employees to work remotely, at least partially, even after returning to the workplace. Similarly, there have been calls by employees to keep their new WFH arrangements, with most preferring to continue working remotely, at least some of the time, even after the pandemic comes to an end (Murphy, 2020; Eurofound, 2020). Academia is no exception, as an increasing number of academic institutions are allowing their staff to WFH (Widar et al., 2022).

2.4 Working From Home

There is no shortage of research on WFH. Numerous studies have been published looking into the advantages and disadvantages of said work arrangement (Pérez et al., 2002; Morgan, 2004; Aguilera et al., 2016). However, despite the attention given to the topic, there is still much to learn. Research that looks into the experiences of academics working from home is particularly scarce in the literature (Ng, 2006; Aczel et al., 2021; Widar et al., 2022).

Seeing as one of the goals of this study is to identify the most prevalent challenges of working from home for academics, a review of the literature on general challenges of WFH will be carried out. This will build upon the systematic literature review that I performed for my specialization project (Delgado, 2021).

To discuss and organize the challenges of WFH present in the literature, I will use the model proposed by Baruch and Nicholson (1997), who defined four ‘realms’ that encompass the main issues for individuals who work remotely: *Home & Family*, *Individual*, *Job*, and *Organization*. These four clusters will be used as a point of reference to explore the different types of challenges that can arise as a result of WFH in the literature. Additionally, I will discuss how these challenges might be relevant to academics; this latter discussion, however, will be dependent on the available literature.

Baruch and Nicholson (1997)’s four realms are shown in Figure 1:

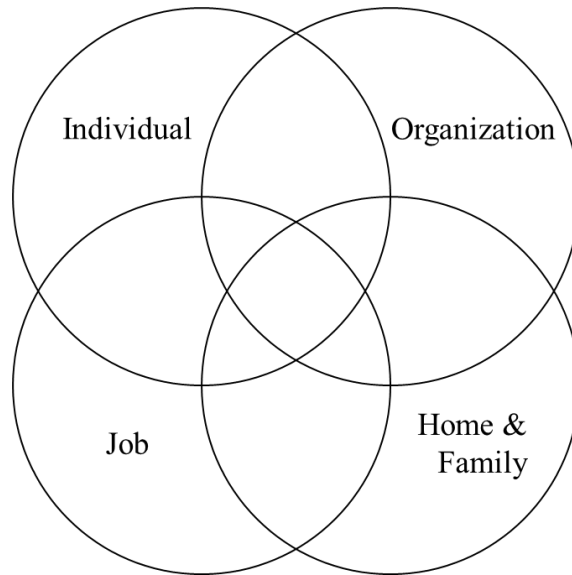


Figure 1: Four Elements for Home Working (Baruch and Nicholson, 1997)

It bears repeating that Baruch and Nicholson's (1997) model will only be used as a reference to better understand and visualize the concepts that might arise in this study. It will not, however, be used as a strict guide for the discussion. Its usefulness comes from the fact that most challenges in the literature should in all likelihood fall under one of the four clusters that were proposed in their model.

2.4.1 Home & Family Dimension

Working from home has long been encouraged as a means to effectively manage work and personal life (Allen et al., 2015). Butler and Jaffe (2021) found in their study that WFH allowed individuals to spend more time with their family. Similarly, Harpaz (2002) suggests that it is a good way of handling small children or older family members. All in all, WFH is associated with a perception of greater flexibility by the remote employees (O'Neill et al., 2009). However, WFH is not a panacea for managing family obligations, and the convergence of the work and family environments can also be a source of strain for the remote worker (Greenhaus and Beutell, 1985).

Numerous papers allude to the "work-family" conflict, which refers to a form of conflict where the pressures from the work and the family domains are incompatible (Weer and Greenhaus, 2014). Greenhaus and Beutell (1985) identified three types of work-family conflicts: *time-based conflict*, *strain-based conflict*, & *behavior-based conflict*. The *time-based conflict* refers to the work and the family roles competing for the individual's time, making it difficult to fulfill the requirements of both; the *strain-based conflict* refers to the strain (e.i., anxiety, fatigue, etc.) caused by one role, affecting the performance of the other role; lastly, the *behavior-based conflict* refers to conflicts caused by the individual's inability to adjust their behavior to comply with the demands and

expectations of the two roles.

One of the more prominent challenges in the literature that comes as a result of this inter-role conflict, is an increased number of interruptions and distractions while trying to carry out work related tasks at home. This is due to the physical proximity of family members at home, which can make it difficult for workers to cope with a constant stream of family distractions (Hardman et al., 2021). It would be a bit disingenuous, however, to solely criticise WFH on this issue, as it is not exclusive to individuals with this specific work arrangement. A number of papers in the literature argue that WFH workers can actually benefit from a cutback in the amount of disruptions coming from co-workers at the office (Laumer and Maier, 2021; Fukumura et al., 2021; Kurland and Bailey, 1999; Bailey and Kurland, 2002). This is consistent with Hesse and Grantham (1991), who mention that office work is also susceptible to work-flow disruptions; working from home then is a good way of getting certain tasks completed as it allows employees to avoid interruptions from the office environment.

These disturbances are, more often than not, due to a lack of physical separation between the work and the living spaces (Eurofound, 2020). Studies in the literature argue that the challenge of having to deal with interruptions while working from home could be addressed by having a dedicated space at home to carry out work related tasks. Baruch and Nicholson (1997) state that suitable work space at home (commonly referred to as a ‘home-office’) is very important to avoid conflicts and distractions, and thus make WFH sustainable. This is consistent with Laumer and Maier (2021) who point out that having physical separation between the work and family domains can prevent interference from one to the other. This in itself, however, can be a challenge for remote workers, as the physical attributes of an individual’s residence sometimes make it impossible to incorporate a home-office.

The COVID-19 pandemic only served to aggravate this aspect. With the closure of workplaces and schools, both employees and their children were forced into carrying out their respective responsibilities from home, increasing the likelihood of domain conflicts. In their study of women academics, Walters et al. (2022) found that their respondents struggled to balance the demands of their job (e.i., teaching, research, writing, etc.) and their family, specially because the COVID-19 pandemic forced the closure of school and childcare services. Taken together, it is reasonable to assume that this should be a challenge for academics in this study.

2.4.2 Individual Dimension

One of the most common challenges found in the literature as a result of WFH is overcoming feelings of isolation (Kurland and Bailey, 1999). The fact that this is such a widespread issue in the literature is not exactly surprising seeing as individuals essentially trade working in a collegial environment with their coworkers, to working alone by themselves when they decide to WFH.

This issue was further exacerbated with the outbreak of the COVID-19 pandemic, because, as mentioned previously, to curve the spread of the virus, governments implemented numerous social distancing measures. While these measures were successful in limiting the quick spread of the virus, they also had a huge impact on people’s mental well-being (Eurofound, 2020). Many studies written after the pandemic alluded to this being an issue; for example, Hardman et al. (2021), found that up to two thirds of their respondents encountered feelings loneliness and isolation while working from home.

In addition to experiencing feelings of loneliness and isolation, WFH can be associated with a plethora of other mental health related issues. Hayes et al. (2020) suggest that WFH might be associated with higher levels of stress and work-related burnout. Similarly, in studies by Ferreira et al. (2021), de Godoy et al. (2021), and Dias et al. (2021) employees reported feelings of stress, anxiety, and depression while working from home. Walters et al. (2022) also found that their respondents mentioned an increased need for emotional support, as well as feelings of exhaustion. Furthermore, some papers have found that some employees find it hard to find motivation to carry out work-related tasks (Butler and Jaffe, 2021; Raišienė et al., 2020). While the social distancing measures put in place during the COVID-19 pandemic played an important role in increasing the emotional toll described in much of the recent literature regarding WFH, it is also important to understand that the pandemic was not the *raison d’être* of mental health issues related to WFH; this type of issues had been present in the literature long before the emergence of the COVID-19 virus.

A second challenge, that goes along the same vein, is that WFH can also cause feelings of professional isolation (Kurland and Bailey, 1999). Hesse and Grantham (1991) state that working remotely for extended periods of time deprives employees from social and informal communication with their colleagues. These interactions are important because face-to-face contact is critical for creating rapport among colleagues (Cooper and Kurland, 2002). Similarly, Kurland and Bailey found that working remotely makes it difficult to overcome the absence of informal learning; they argue that this type of learning takes place when employees meet by the water cooler, in the hallways, or over lunch. Individuals who WFH miss these types of interactions because they are not something that can be put on a calendar and be scheduled, they happen informally and spontaneously.

The allusion to lack of informal communication in the literature can be linked to the importance, or lack thereof, that is placed on it by the employees of an organization. In the study by Cooper and Kurland (2002) on perceptions of professional isolation of telecommuters, they suggest that the extent to which activities such as informal networking and informal learning are valued in an organization, will directly impact how much professional isolation an employee experiences. Therefore, organizations where this is an important part of their culture, will be more prone to this issue. Speaking specifically about academics, both formal and informal communication with

their colleagues can be an important aspect of their job and valuable for the scholarly environment as a whole. As Grande (2020) describes, conferences are more than just presenting scientific work, they are also an arena for discussions about their fields of study, and they often take place outside a conference’s formal program. In regard to the day-to-day life, Aczel et al. (2021), found that academics are better at keeping in touch and sharing their thought with their colleagues while being physically present at the office, than while working from home. This is consistent with Ng (2006), who in their study of full-time academics in open, distance, and online educational institutions, found that faculty members who were geographically dispersed typically felt isolated from other colleagues. Likewise, the teaching aspect of an academic’s responsibilities generally requires constant communication with their students. In their exploratory study, Dias et al. (2021) found that 96.4% of teachers working from home believe that the lack of contact and interaction with students interfered with their work.

An additional aspect to consider, is that the individual’s amount of experience, or lack thereof, can be a factor that plays a role in the remote worker’s ability to thrive while working from home. O’Neill et al. (2009) suggest that individuals with greater organizational tenure are more likely to be trusted and be more knowledgeable with the work at hand, and are therefore more likely to work remotely. This is consistent with L. Schweitzer and Duxbury (2006), who found that remote workers tend to have greater years of experience on the job than their non-remote counterparts.

In regard to the different academic disciplines, the literature seems to indicate the importance of professional isolation varies between soft and hard disciplines. Biglan (1973b) suggests that hard disciplines have a higher degree of “connectedness”, meaning that scholars in hard fields tend to collaborate with colleagues and other faculty members at a higher degree in both research and teaching activities. Furthermore, (Biglan, 1973b) also found that output in terms of report publications was positively linked to “connectedness” in hard disciplines. This is consistent with Menzel (1959), whose study of researchers within hard disciplines (e.i., biochemists, chemists, and zoologists) suggests that scholars acquire new or relevant information to their research not just through reading literature, but also through discussions with fellow academics. Taken together, this would indicate that academics in hard disciplines are likely to be negatively affected to a higher degree than those in soft disciplines by the social deprivation inherent in WFH.

2.4.3 Job Dimension

It is clear that WFH can be a very desirable work arrangement among employees, unfortunately, not all jobs are suitable to be carried out remotely (Allen et al., 2015). Bailey and Kurland (2002) claim that the idiosyncratic details of the job will determine whether an individual can WFH. O’Neill et al. (2009), Baruch and Nicholson (1997), & Feldman and Gainey (1997) suggest that jobs with a higher degree of autonomy are better suited for WFH. On a more practical note, Allen et al. claim that jobs that are physically portable or that can be done online, for example, lend

themselves to be carried out remotely. This goes along the same lines as Baruch and Nicholson who suggest that jobs that are easy to control remotely and simple in terms of technology are a good fit for this type of work arrangement.

In regard to academia, Baruch and Nicholson (1997) suggest that in jobs in the service sector, such as jobs related to education, only a small portion of workers could carry out their work responsibilities from home. They argue that physical contact with the client (students in the case of the education sector) is an unmovable requirement. Something to note is that Baruch and Nicholson’s paper was written before the turn of the century and times have changed. The recent COVID-19 pandemic made it painfully clear that physical contact is no longer the prerequisite it once was to carrying out educational activities. Interestingly enough, the highest incidence of WFH during the pandemic was in the service sector (notably education) (Eurofound, 2020).

In terms of teaching, digital teaching is not a new concept and had been becoming increasingly popular in the last few decades not just in distance education institutions, but in traditional universities as well (Ng, 2006). However, with the advent of the COVID-19 pandemic, all types of educational institutions were forced to carry out lectures and different teaching related activities from home. Aczel et al. (2021) surveyed over 700 academics and found that the overwhelming majority (even those with teaching duties) believe that it would be possible and even ideal to carry out their academic responsibilities from home. Similarly, in their study, Afrianty et al. (2022) suggest that online course offerings should become a permanent feature in universities, with the purpose of giving academics increased flexibility and to reach a wider range of students. Not all existing literature is quick to praise WFH as an effective work arrangement for academics, however. Walters et al. (2022) found that carrying out academic work was extremely difficult for most of their respondents. Similarly, Dias et al. (2021) found that the overwhelming majority of those with teaching duties felt that the lack of contact and interaction with their students interfered with their work. Along the same lines, Le et al. (2022) states that academics struggled with online lectures, as students showed no engagement even when called on.

In terms of research, the nature of the work carried out by academics can vary wildly depending on their discipline, and it is something that might impact their perception of WFH as a prospective work arrangement. Baruch and Nicholson (1997) claim that working from home might not be feasible for workers who require equipment that cannot be operated remotely. In the case of academics, this issue is not uncommon for those that require specialized equipment to carry out their research tasks. In their study of women academics, Walters et al. (2022) found that those in “bench sciences”, such as chemistry or biology, stated that the closure of laboratories and other facilities during the COVID-19 lock-downs directly affected their research productivity. This is an issue particularly for academics within hard disciplines (e.g., chemistry, mechanical engineering, etc.) that carry out experimental research, because the acquisition of results hinges on the researcher’s ability to be physically present in laboratories. According to Walters et al., academics

in soft disciplines were affected to a lesser degree.

In addition to the question of whether a job can be carried out from home, a common worry of this work arrangement concerns how effective workers actually are while working from home. In terms of performance and productivity, the literature indicates that remote workers are just as, or more productive compared to regular workers (Hesse and Grantham, 1991; Baruch and Nicholson, 1997; Harpaz, 2002). In the literature review carried out by Bailey and Kurland (2002), they claim that in nearly all the papers they examined, WFH was associated with increased productivity. Likewise, Sarnosky et al. (2022) suggest that remote work is not detrimental to workplace productivity.

Increased workload is also a frequently cited challenge of WFH (Kurland and Bailey, 1999; DeFilippis et al., 2020; Fukumura et al., 2021). O'Neill et al. (2009) found that remote workers spend more hours working than their non-remote counterparts. Similarly, in their study, L. Schweitzer and Duxbury (2006) found that remote workers dedicated significantly more hours to work per week than non-remote employees. The COVID-19 pandemic further exacerbated this issue; in their study, DeFilippis et al. (2020) examined the impact of the pandemic on employee's digital communication patterns, and found that the average workday lasted 8.2% longer. Academics are not immune to this, as Walters et al. (2022) & Hjelsvold, Bahmani and Lorås (2020) found in their study, that academics observed an increase in administrative workload, such as increased number of meetings, email correspondence, and time adapting courses to online courses.

Speaking specifically about Norway, in their study of Norwegian employees during the pandemic, Da et al. (2022) found that the work situation of those working from home somewhat deteriorated, as they experienced an increased workload compared to those in the office. However, they did not find significant differences in other job demands; they argue that this could be attributed to the 'Norwegian Working Environment Act', which compels employers to ensure that work responsibilities do not impact their employees' mental and physical well-being.

As a whole, the literature seems to indicate that the academics in this study should be affected on some level by the common challenges associated to their research and teaching related duties. Furthermore, academics within hard disciplines are likely to struggle to effectively carry out their research related duties while working from home to a greater degree compared to those in soft disciplines.

2.4.4 Organization Dimension

In the model proposed by Baruch and Nicholson (1997), the organizational cluster focuses on the negative perception from top management and from colleagues toward individuals working from home. Baruch and Nicholson point out that management in organizations can be unsupportive of WFH because they are wedded to the erroneous belief that WFH employees are not getting any work done at home. Likewise, co-workers can become envious or suspicious of their remote

counterparts due to similar attitudes. This type of unsupportive organizational culture can end up undermining WFH as an optional work arrangement in any workplaces. It is worth noting, however, that these feelings tend to happen in organizations where WFH is done by few individuals, whereas in organizations where it is the norm, these feelings are absent (Baruch and Nicholson, 1997).

Baruch and Nicholson (1997) only discuss challenges related to the negative perception towards WFH within the organization, however, based on the literature review that I carried out in my specialization project, I argue that there are a number of issues missing in this cluster (Delgado, 2021).

For one, there are two sides to this proverbial coin, and concerns regarding WFH are not exclusive to employees working physically at the workplace; WFH employees themselves can also have concerns about the arrangement while working at home. As Raišienė et al. (2020) point out, some employees expressed doubts about whether their superiors could properly assess their competencies and performance while working at home. This is consistent with Aczel et al. (2021) who mention that being away from the workplace increases the fear from WFH employees of missing out on promotions or opportunities due to the lack of visibility. Fear and concerns regarding WFH negatively impacting an employee's ability to advance in their career are not unfounded; in their research, Golden and Eddleston (2020) found that an employee's salary growth and promotion opportunities are negatively affected by extensive remote work. This is generally an issue because of what Aczel et al. alluded to, which is that there is a lack of visibility while working from home. Some organizations measure work performance based on what they observe. However, as many in the literature (Olson, 1983; Baruch and Nicholson, 1997; Kurland and Bailey, 1999; Allen et al., 2015; Kost, 2020) point out, WFH lends itself better to organizations that focus on measurable outputs and deliverables to evaluate work performance.

A second aspect is organizational implementation. This refers to the actual tangible efforts that an organization puts in place to enable WFH employees to carry out their work responsibilities effectively. This is important because, at the end of the day, even an organization bearing the perfect combination of characteristics to be successful with WFH will suffer, if the working arrangement is not properly implemented.

The COVID-19 pandemic played a pivotal role in the implementation aspect in most organizations as they were forced into implementing WFH out of the blue, instead of implementing the work arrangement in an organic way. According to Eurofound (2020), nearly half of employees working from home during the pandemic, had no previous experience with the work arrangement. Weijers et al. (1992) claims that WFH will produce benefits only if it is implemented as a matter of free choice by both the organization and the individual. Likewise, de Godoy et al. (2021) suggests that having a careful and thorough planning phase before implementing WFH can lead to its success. A lack of planning can lead to individuals having to fend for themselves and having to find a way to do their jobs without organizational support (Afrianty et al., 2022). It is therefore not

unreasonable to assume that the overnight transition to WFH put a spotlight on organizations that were ill-prepared for it.

A third aspect in this cluster concerns communication challenges. Several studies written after the outbreak of the COVID-19 pandemic found challenges related to communication (Raišienė et al., 2020; Aczel et al., 2021; de Godoy et al., 2021). I argue that challenges related to communication land in the organizational cluster because communication as a whole is one of the most (if not the most) fundamental features of any organization. Therefore, if an organization consistently faces challenges related to communication, I believe that it is a failure of the organization itself rather than a fault of the individual.

Communication challenges come in many shapes and sizes. The most common in the literature is difficulties collaborating effectively with colleagues. As Matli (2020) explains, WFH employees that need to collaborate with on-site colleagues on the same task tend to have issues, because information takes longer to be shared when not physically present at the workplace. When physically present at the office, this is usually not an issue because employees can simply walk over to their colleagues and get whatever information it is they require. Along the same lines, Cooper and Kurland (2002), suggest that remote workers run the risk of not receiving information that could provide support to carry out their work related tasks while not physically present at the office. Speaking specifically about soft and hard academic disciplines, based on Biglan's (1973) claims that hard disciplines collaborate with colleagues to a higher degree, it is not unreasonable to assume that these academics might face more struggles in regards to collaborating effectively while working from home.

Many organizations make up for the lack of face-to-face contact with digital communication tools such as email and videoconferencing tools. However, this in itself is a challenge, because it is easy for the number of emails and virtual meetings to skyrocket and quickly become overwhelming for remote workers. de Godoy et al. (2021) state that the high frequency of meetings creates “virtual meeting fatigue” among remote employees. This is consistent with Kost (2020), who mentions that there was a general sense among remote employees during the pandemic, that they never stop being on Zoom or interacting virtually, which can become very taxing. Along the same lines, Allen et al. (2015) mention that the availability of communication tools blurs the temporal work/home boundary, as individuals can remain constantly connected to work through emails, for example. Along the same vein, DeFilippis et al. (2020) state that there was also an increase in the frequency of email activity when employees transitioned to WFH during the pandemic.

A fourth and final aspect is organizational support. This comes in many forms; the most common one in the literature is related to ICT. Kurland and Bailey (1999) suggest that remote workers might need to be more technically savvy than their non-remote counterparts, in order to be able to access work related resources while at home. This is in line with Walters et al. (2022), who suggest that the dynamics of working online and using technology add to the stress experienced by employees working from home. In regards to academics, Afrianty et al. (2022) suggest that

universities contemplating a transition to WFH arrangements should ensure that their staff have sufficient digital capabilities in order to cope with the shift in workplace. Speaking specifically about Norway, only 46% of teachers reported that ICT was included in their formal teaching training, which is lower than the average Organization for Economic Co-operation and Development (OECD) countries (OECD, 2020).

Taken together, academics in this study should be affected, at least on some level, by the organizational challenges described in this subsection. Furthermore, the COVID-19 pandemic affected every type of organization, and educational institutions were no exception, therefore implementation and support challenges are likely to be reported by academics.

3 Method

This section consists of a detailed description of how the research was carried out. This includes the discussion of the research strategy and design that were chosen, how the sampling of the participants was carried out, how the interview guide was developed, description of ethical considerations taken throughout the development of the study, and lastly, how the data itself was collected and analysed.

3.1 Research Strategy

A research strategy refers to the general orientation of the execution of social research (Bryman, 2016). The selection of a research strategy is important for any study, as it must be tailored to its research purpose. The two main methods distinguished are quantitative research and qualitative research.

Quantitative research refers to a type of research that emphasizes quantification during the collection and analysis of data (Bryman, 2016). It generally uses mathematical and statistical tools to acquire results and it is regarded as objective because the elimination of bias and emotional detachments are stressed in this type of approach (Johnson and Onwuegbuzie, 2004). Qualitative research, on the other hand, emphasizes words over quantification during the collection and analysis of data (Bryman, 2016). This approach uses non-numerical data such as textual material obtained from talking or observing subjects, in order to understand social phenomena in their natural contexts (Malterud, 2001). It is important to note that despite some writers arguing for the superiority of one over the other, there is really no paradigm in social research.

Bryman (2016) argues that if the research topic at hand has not been researched extensively and there is little existing literature to draw leads from, it might be difficult to carry out quantitative research. On the other hand, a qualitative research approach might be more effective as "... it

is typically associated with the generation rather than the testing of theory” (Bryman, 2016, p. 36). Seeing as the purpose of the present study is to explore the experiences and challenges that academics faced while working from home, a qualitative research approach seems to be the most suitable one. This is supported by Malterud (2001), who states that this kind of research approach is used to acquire a deeper understanding of social phenomena experienced by individuals in a specific context. I argue that while hard numbers might be able to say which challenges are the most common among academics, it would be a very surface level analysis; a quantitative approach would not be able to fully capture the nature of the challenges themselves, meaning the specific context in which they occur and the reasons that academics might struggle with them.

3.2 Research Design

According to Bryman (2016, p. 695), a research design refers to “... a framework or structure within which the collection and analysis of data takes place”. In his book, Bryman examines five different kinds of research design: *experimental*, *cross-sectional*, *longitudinal*, *case study*, and *comparative* design.

An *experimental* design refers to quintessential research experiments used to validate hypothesis, typically through the use of experimental and control groups (Bryman, 2016); this research design was ruled out because the purpose of the study is to examine past experiences and not something happening in real time. A *cross-sectional* design refers to the collection of quantifiable data on a sample of cases in a specific point in time, with the goal of identifying patterns between different variables (Bryman, 2016). This type of design could have potentially been used, however, I opted against it because I felt like a survey would not be able to fully capture the idiosyncrasies of the experiences of academics working from home. In a *longitudinal* design, a sample is surveyed once and is later surveyed at the very least a second time after a certain period of time, giving insight into the role of ‘time’ as a variable in the study (Bryman, 2016); this design was discarded from the get-go due to the time constraints of the thesis. The last two kinds of research design: the *case study* and the *comparative* design are a bit similar; the former refers to the thorough analysis of a single case, whereas the latter, contrasts two cases using identical methods (Bryman, 2016). The *case study* was scrapped because as Bryman suggests, in this type of approach, the emphasis of the research tends to be on an in-depth examination of the setting. In the present study, the location is mostly incidental, therefore, I did not feel like it would be a suitable approach. Lastly, the *comparative* design was discarded because it simply did not fit the purpose of the study.

Seeing as none of the research designs proposed by Bryman (2016) fit the research goal quite right, I decided to go in a more general direction, and landed on an *exploratory* approach. An *exploratory* research approach is a broad term, however, in this paper I borrow the definition by Stebbins (2001):

Social science exploration is a broad-ranging, purposive, systematic, prearranged undertaking designed to maximize the discovery of generalizations leading to description and understanding of an area of social or psychological life.

This research approach can be useful when researchers have “... little or no scientific knowledge about the group, process, activity, or situation they want to examine” (Stebbins, 2001, p. 06). Bryman (2016) echoes these sentiments by stating that an exploratory stance is preferable when there is little prior literature from which to draw from. I believe that this is consistent with the nature of this study, seeing as there is a limited amount of existing research regarding academics working from home. Furthermore, as Elman, Gerring and Mahoney (2020) state, while some social phenomena (WFH in this case) have already been studied, new and interesting hypothesis are always welcome. Taken together, an *exploratory* research approach seems like the most suitable for the present study.

I confess that the present study does have certain *case study* elements. As Bryman (2016) notes, this is not an uncommon occurrence, as most types of research can be construed as case studies. It was important, however, to make a distinction, because I did not want to pigeonhole myself into a research design that limited my ability to effectively address the research purpose of the study.

3.3 Sampling

A *sample* refers to the segment of a population that is selected for research (Bryman, 2016). *Sampling* is then the process of selecting candidates for a research study; this is an important part of any paper because the sample must have informants who are suited for the research purpose. In regard to the present study, the participants were selected using a *generic purposive sampling* approach. This type of approach involves selecting participants not on a random basis, but rather in a strategic manner, to ensure that the sampled participants are relevant to the research goals (Bryman, 2016). I established a set of criteria that had to be met by the participants in order for them to be interviewed. Firstly, I limited the setting to the NTNU; I reckoned that, as a student at the institution, I would have an inside track to finding suitable participants. Secondly, I focused on subjects who had experience carrying out both research and teaching activities before, during, and after the pandemic. The purpose was to have respondents who could have a point of reference and understand how things used to be done at NTNU before the pandemic, compared to how they are done now. I posit that this way, the respondents who get selected, would have a clearer idea of the challenges that came as a result of WFH. Lastly, I focused on interviewing subjects from the different faculties across the university to acquire a bigger picture of the institution as a whole.

I initially tried using a *snowball sampling* approach as Bryman (2016) calls it; this approach consists of making initial contact with a group of candidates relevant to the research topic, who then propose other candidates who might have the desired characteristics for the study. However,

this approach resulted unfruitful in producing candidates from varied faculties. The initial crop of candidates only suggested potential candidates from their own departments/faculty. Therefore, in order to get a holistic view of the institution, I proceeded with a *generic purposive sampling* approach. This included looking through the university employee registry to search for and contact academics from different departments and faculties that fit the inclusion criteria. This turned out to be a challenge because academics receive an inordinate number of emails every day, meaning that they would often miss or forget to reply to my inquiries. An additional drawback of doing this is that it is quite possible that the academics that did agree to carry out an interview would be those with strong feelings towards this type of work arrangement. This bias, however, is difficult to avoid in social research and will therefore not attempt to compensate for it; I do acknowledge, however, that it can be considered a weakness of the study.

3.4 Interview Guide

An interview guide generally refers to a set of questions to be asked during the interview process. To develop an interview guide, an interview approach must be selected. Bryman (2016) identifies three types of interview approaches: *structured interview*, *semi-structured interview*, and *unstructured interview*. An interview guide can vary quite a bit depending on what type of interview approach is chosen. The first type, the *structured interview*, is usually used in quantitative research and it consists of the researcher administering the exact same set of interview questions to every participant with the purpose of later being able to aggregate the answers. The second type, the *semi-structured interview*, consists of administering a series of questions which are not as rigid as those found in a *structured interview*; this means that the researcher can alter the sequence of questions, as well as make further inquiries if they identify interesting aspects in the interviewees' answers. The last type, the *unstructured interview*, involves the interviewer having only a list of topics that they want to cover during the interview; this type of interview is usually more informal than the other two mentioned above, and more akin to a conversation.

For the present study, I elected to go with a *semi-structured interview* approach; I reckon that having an interview guide to lean on during the interview process would be helpful, specially considering my non-existent experience carrying out interviews. Furthermore, this approach allows for flexibility in regard to the direction that the interview can take and is not as rigid as a *structured interview* approach; I believe that this will help to explore relevant themes that might emerge throughout the interviews.

Following Bryman (2016), some pilot interviews were carried out early on in the development of the interview guide. The purpose was to explore the research topic and to survey potential avenues of interest. Additionally, the pilot interviews were helpful to see how the interview as a whole flowed, which allowed me to iron out issues that would be likely to pop up during the actual interviews. A total of three pilot interviews were carried out and general questions about the research topic were

included. None of the aforementioned interviews were recorded nor were they included as part of the empirical data of the present study. They were strictly used as preparation for the interviews that would be carried out later on.

In addition to this, as Bryman (2016) mentions, pilot interviews also serve to give researcher some interviewing experience which can create a greater sense of confidence in them. This turned out to be crucial as I had virtually no experience with carrying out academic interviews, therefore, getting some of the more common mistakes out of the way early (e.g., unclear questions) proved useful for the rest of the study.

Following Kvale (1996), the interview guide includes a set of introductory questions. These are followed by open ended questions which make up the bulk of the interview guide. As Bryman (2016) suggests, the interview questions were formulated in a way that help address the research topic, but were not too specific; the goal was essentially to avoid asking leading questions. Leading or loaded questions are those that seem to lead the interviewee in a specific direction (Bryman, 2016). It was important to avoid these sort of questions because they can push for a particular answer from respondents, which inserts bias into the study and makes the answers less valuable. Additionally, as Kvale suggests, ‘follow up questions’ were made to get the participants to elaborate on some of their answers. Similarly, ‘interpreting questions’ were also asked to verify my understanding and interpretation of some of the participants’ answers. Lastly, a concluding question asking the participants if they had any additional remarks was included at the end of the interview guide. This last question proved useful, as the participants used it to express their thought on the research topic in a more candid manner. A copy of the interview guide is attached in Appendix A.

3.5 Ethical Considerations

According to Bryman (2016) ethical concerns are not unusual in social research. These ethical issues relate to the treatment of the individuals who elect to take part in a research study and the activities that researchers should or should not engage in. Research values and ethical decision-making can be quite subjective, leading to disagreements about what is and what is not deemed ethically acceptable while conducting research (Bryman, 2016). That being said, Diener and Crandall (1978) identified four main types of transgressions to ethical principles, which will be discussed in this section:

1. whether there is harm to participants.
2. whether there is a lack of informed consent.
3. whether there is an invasion of privacy.
4. whether deception is involved.

In addition to how the four main issues mentioned above were addressed during the development of the present study, this subsection will also discuss how the local rules and regulations in Norway were followed.

3.5.1 Harm to Participants

The first group, ‘harm to participants’, generally comes in the form of physical harm, stress, loss of self-esteem, etc. (Bryman, 2016). In the case of the present study, I believe that there is little chance that any of these types of harm will be done to any of the participants. I did, however, make sure to be as flexible as possible when scheduling the interviews, to find the best possible fit in the participants’ schedule, and thus avoid unnecessarily stressing the participants. In addition to this, Bryman suggests that harm could be done to participants if the confidentiality of records is not maintained throughout the study. This could be done involuntarily if care is not taken to ensure that individuals are not identifiable. To address this concern, I made sure to be careful to not include any information that might be specific enough for someone to be able to identify the participants simply by reading this paper. Likewise, I made sure to report the findings in a way that all participants remained anonymous.

3.5.2 Informed Consent

The second group, ‘lack of informed consent’, refers to ensuring that the research participants have access to enough information about the research study, in order for them to be able to make an informed decision about whether they will take part in the study or not (Bryman, 2016). In the case of the present study, I made sure to be transparent about my intentions and the purpose of the study when first contacting the participants. Once the participants agreed to be interviewed, I sent a consent form for them to read through and sign before the interview. This was done with plenty of time in advance (usually at least a day or two before the interview would take place). The form contained detailed information regarding the nature of the study, how their personal data would be protected, how the data would be dealt with at the conclusion of the study, as well as their rights as participants in the study. A copy of the consent form is attached in Appendix B. Furthermore, at the start of each interview, I would go over the key points of the research study and would answer any question that the participants may have had. In addition to this, I made sure to let them know exactly when the recording would start and end.

3.5.3 Invasion of Privacy

The third group, ‘invasion of privacy’, refers to transgressions to the participant’s right to privacy (Bryman, 2016). The issue of privacy goes hand in hand with what was mentioned earlier regarding confidentiality of records. Bryman suggests that a lack of safeguards to protect the participants’

identity and personal information can risk the maintenance of confidentiality. To ensure that no unauthorized person could access the personal data of the participants, a couple of measures were taken. Firstly, the audio files and interview transcripts were kept in an external drive locked away at all times (except when I was actively going through the information). Secondly, the names of the participants were replaced with pseudonyms (e.g., Jane = Interviewee #1). The list of the names and their respective pseudonyms were stored separately from the collected data (e.i., interview transcripts); that way, if somehow the interview transcripts, for example, were to be accessed by an unauthorized third party, that individual would not be able to determine who the interviewees are.

3.5.4 Deception

The fourth and final group, ‘deception’, refers to researchers presenting their work as something different than what it actually is (Bryman, 2016). This is closely linked to the issue of ‘informed consent’, as it is not possible for someone to give informed consent to a study where deception of the participants is involved. Similar to the second group, I addressed this concern by being as up-front and honest as possible regarding the purpose of the study; furthermore, I cleared up any questions or misunderstandings that the participants might have had throughout the interview process.

3.5.5 Local Rules and Regulations

In Norway, when a research project processes personal data, the Norwegian Center for Research Data (NSD) must be notified (NTNU, 2022). In order to do this, a notification form had to be filled out at NSD’s website. The application consisted of explaining which personal data would be processed, describing the nature of the project, specifying who would be responsible for the management of the data, explaining how consent would be documented, explaining how the collected data would be handled, among others things. In addition to this information, I also sent a copy of the interview guide, as well as a copy of the consent form that the participants would need to sign in order to take part in the study. The processing of my application took a little over two weeks. After this period, I was notified by NSD that the assessment of the planned processing of personal data in my study had been completed and that it had been deemed as lawful, so long as it was carried out as I had described it in the application. A copy of the assessment is attached in Appendix C.

3.6 Data Collection

A total of eight subjects were interviewed for the present study. These subjects were interviewed between the months of February 2022 and March 2022. Following the theme of the research topic,

all interviews were carried out remotely through Microsoft Teams. The interviews were carried out in English, which could have been an issue seeing as English was none of the participants' first language, making it likelier to run into confusion or misunderstandings. To mitigate this, I made sure to use plain and simple language, and avoided using unnecessary jargon, as Bryman (2016) suggests. Unfortunately, I believe that the use of a foreign language might have negatively affected the thoroughness of some of the participants' answers, as some of them were not very eager to share much, which led to short interviews. This I believe could be considered a weakness of the study.

The participants come from seven of the nine faculties at NTNU. Ideally there would have been at least one participant from each of the nine faculties at the university, in order to truly get an overview of the entire institution. However, attempts to find candidates from the "Faculty of Medicine & Health Science" and from the "University Museum", who complied with the inclusion criteria and were willing to take part in an interview, proved futile. Furthermore, increasing the number of participants was difficult due to the limited amount of time allotted to the development of this thesis. Nonetheless, the interviews that were carried out do manage to shed some light into the experiences of academics in different fields and in different faculties across the institution. I do acknowledge, however, that potentially valuable information could have been gathered had I managed to find relevant candidates from the two missing faculties, which could be considered another weakness of the present study.

The audio of the eight interviews was recorded in order to better focus on the interview itself rather than on taking rushed notes. Bryman (2016) suggests that audio-recording can be an extremely useful tool because the interviewer must be alert in order to follow up on interesting points and to draw attention to inconsistencies in the interviewee's answers. Therefore, being distracted with note taking, can hamper the interviewer's ability to effectively do so. There are drawbacks to recording interviews, however; Bryman states that some participants might be alarmed by the fact that their answers will be recorded, and might not be as open when answering the questions, which in turn might yield uninteresting answers. In the present study, I do not believe that this was the case, because as far as I could tell, none of the participants shied away from being candid about their views and opinions, even if they were being negative about something, like for example being critical of the institution.

Following Bryman (2016), I made sure to take notes of comments that the subjects made after the interview had concluded and the recording had stopped. Bryman points out that it is quite common for relevant things to come out after the interview has been concluded in small talk between the interviewer and the interviewee afterwards. This was very much the case in several of the interviews that I conducted, as several of the participants kept talking about the research topic and touched upon some things that they had not done during the actual interview.

The interviewees' position, the department that they belong to, the type of discipline that they

are members of and the interview lengths can be found in Table 2 below. As mentioned in the previous subsection, the names of the participants have been replaced with pseudonyms.

Interviewee	Position	Faculty	Discipline Type	Interview Length
Interviewee #1	Professor	Faculty of Engineering	Hard	21 min
Interviewee #2	Professor	Faculty of Economics and Management	Soft	38 min
Interviewee #3	Professor	Faculty of Social and Educational Sciences	Soft	40 min
Interviewee #4	Associate Professor	Faculty of Humanities	Soft	15 min
Interviewee #5	Associate Professor	Faculty of Information Technology and Electrical Engineering	Hard	28 min
Interviewee #6	Professor	Faculty of Natural Sciences	Hard	11 min
Interviewee #7	Professor	Faculty of Architecture and Design	Hard	32 min
Interviewee #8	Professor	Faculty of Natural Sciences	Hard	13 min

Table 2: Sampling of Interviewees

3.7 Data Analysis

The first step in analysing the data that was gathered was to transcribe the audio files of the recorded interviews. This was done fairly soon after each individual interview concluded instead of waiting until all the data had been gathered. Audio transcription is an extremely useful tool for qualitative research as it allows for thorough and repeated examination of the interview data and it helps remove the natural limitations of a person’s memory (Bryman, 2016).

Once the interview audio was transcribed, the next step was to ‘code’ the data. Coding refers to the process of reviewing interview transcripts and sorting the data into meaningful categories (Lofland et al., 1995). According to Lofland et al., this classification can be done in two steps: *initial coding* and *focused coding*. *Initial coding* consists of inspecting the interview transcripts line-by-line and giving initial ‘labels’ or ‘tags’ to the chunks of data that might be of significance to the research topic; these labels constitute ‘codes’. Once several codes have been generated, the next step is *focused coding*, which builds on the initial coding by winnowing out the less useful codes and categorizing the relevant codes into larger overarching categories.

In the case of the preset study, I carried out the two step process that Lofland et al. (1995) describe, however, I did not carry out the line-by-line coding that they suggest, as it would have made the

coding process unmanageable in terms of time. Instead, I read through the transcripts and added labels only to the slices of data that seemed relevant to the research purpose; moreover, once I noticed a recurring theme in multiple interviews, I would go back and retroactively place labels on the previous interviews with these newly observed themes. As Bryman (2016) suggests, I read and went over the interview transcripts several times until I felt satisfied with the codes that had been generated. Despite feeling confident that I extracted the most important points from the gathered material, the lack of line-by-line coding could be perceived as a limitation of the study, as it is possible that certain codes might have been overlooked.

Bryman (2016) suggests that analysis should be done on an ongoing basis because waiting until after all the interviews have been transcribed, creates the impression that the analysis is a colossal task. Furthermore, analysing the data continually provides the ability to notice emerging themes that might also pop up in subsequent interviews. Therefore, following Bryman, analysis of the data was done on an ongoing basis.

Lastly, following Lofland et al. (1995), a set of diagrams were created during the coding process to better organize the data. These visual representations of data are useful because they show the relationships between different concepts in a concise manner. An example of the coding structure is shown in Figure 2 below:

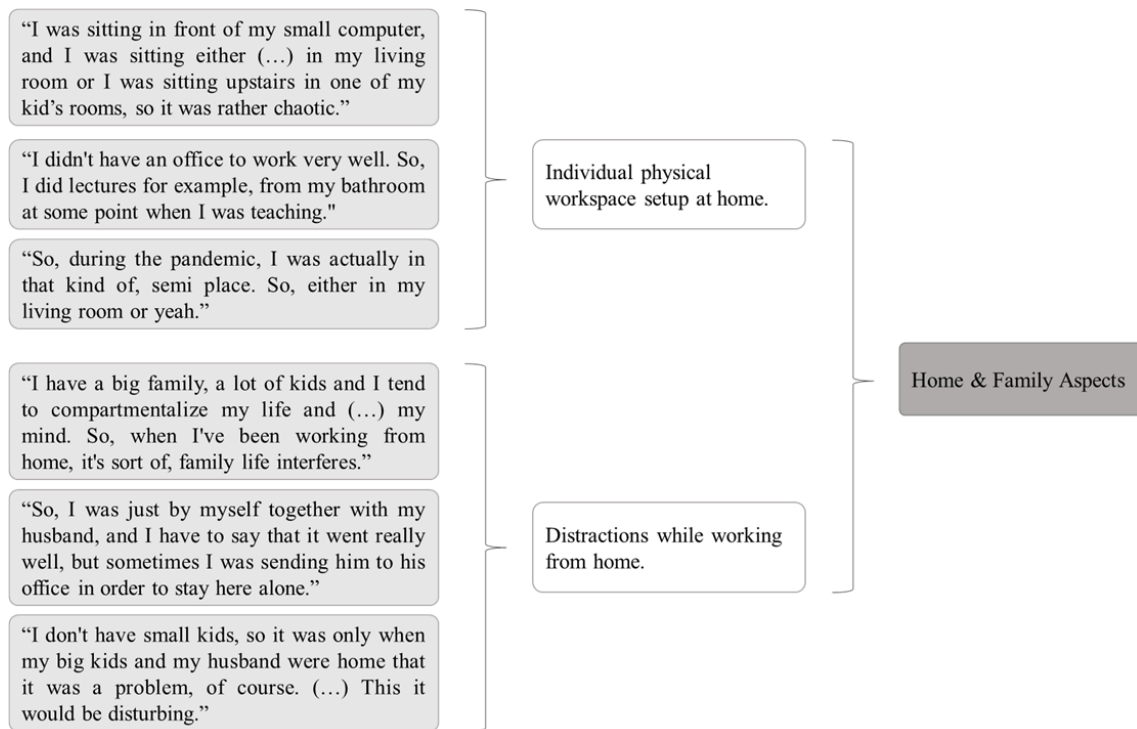


Figure 2: Example of Coding Structure

4 Results

This section will focus on presenting the main findings of the interview and coding process. I start off by giving a general description of the participants and by discussing some background information about the institution, in order to paint a picture of the participants' context. I follow this by presenting the main challenges reported by the interview respondents. This data was categorized into four main clusters: *Home/Family*, *Individual*, *Job*, and *Organization*. A fifth section is included to discuss the differences between hard and soft disciplines found throughout the analysis. Lastly, a sixth section discusses miscellaneous features found during the analysis. Throughout this section, I included representative quotes from the interviews to better illustrate the relevant concepts.

4.1 Institution Background

NTNU is the largest university in Norway with over 40,000 registered students and over 7,000 full-time equivalents (5,057 of which are in academic positions) (NTNU, 2020). NTNU's main campus is located in Trondheim (where this study was carried out), with two smaller campuses in the cities of Gjøvik and Ålesund. The university itself is quite decentralized, meaning that many decisions are done at a faculty level, rather than at a university wide level. NTNU is made up of nine faculties:

- Faculty of Architecture and Design
- Faculty of Humanities
- Faculty of Information Technology and Electrical Engineering
- Faculty of Engineering
- Faculty of Medicine and Health Sciences
- Faculty of Natural Sciences
- Faculty of Social and Educational Sciences
- Faculty of Economics and Management
- University Museum

As mentioned in the previous section the eight participants come from seven of the nine faculties at the university. In terms of country origin, five of the respondents were Norwegian and three of them were European. Regarding tenure at the university, the average number of years that the participants have worked at NTNU is 17 years; in general they were all quite experienced

scholars, and even the less seasoned participants still had significant experience from other academic institutions before joining NTNU.

The positions that the interview participants hold at the institution were either ‘Professor’ or ‘Associate Professor’. In Norway these are protected titles, meaning that academics require specific education and qualifications for them to earn these positions. ‘Professor’ is the highest scientific position that can be held at an academic institution in Norway and for an academic to achieve this title, they require at least a doctorate (Høyere Utdanning og Kompetanse, 2020). Generally, professors perform several different tasks, the two main ones include teaching & supervising students and carrying out research work, however, they are also responsible for administrative duties, such as evaluating papers, applying for funding, etc. The ‘Associate Professor’ title on the other hand, is a level below ‘Professor’, but it also requires a doctorate and includes similar duties to those of a professor. The main difference is that associate professors are generally less experienced than professors; professors tend to have more extensive knowledge of their field and have more experience from carrying out research projects, conferences, and collaborating with the industry, for example.

Something to understand about scholars at the university that likely played a role in the transition to WFH, is that at NTNU, academics enjoy a lot of autonomy in terms of how they carry out their research and teaching activities. It was therefore not uncommon for academics to WFH even before the pandemic began. Half the respondents stated that everyone had already worked from home to a certain extent before the initial lockdown. They mentioned that this work was usually in the shape of grading exams, reading student papers, communicating with students (e.i., emails, discussion forums, etc.), and so on. So, in general, WFH was not an entirely new concept to most of the respondents.

Speaking specifically about the teaching aspect of their jobs, however, most of the participants did not have previous experience carrying out teaching related duties at home. The few that did, indicated that it was very minimal experience, such as arranging remote guest lectures or net-based studies, but not anything particularly extensive; very few had actual experience teaching in the traditional sense of carrying out activities such as lecturing and supervising students remotely.

While not many people would reasonably expect organizations to be prepared to shift their entire workforce to WFH at a moment’s notice, there were organizations who were positioned better than others to do so, and NTNU was one of those organizations. Many of the ICT provisions required to effectively WFH were already in place before the outbreak of the pandemic. Video conferencing and collaboration tools to aid in carrying out courses remotely were already available (e.i., Blackboard Collaborate and Microsoft Teams) and others were added along the way (e.i., Zoom and Panopto). Furthermore, an institution-wide VPN service was already in place, allowing researchers to access academic resources at home just as they would if they were physically at the university.

4.2 Home & Family Dimension

4.2.1 Work-Space at Home

Regarding a dedicated space at home for work, half the respondents stated that they did not have a home-office. Unsurprisingly, those same subjects reported having issues carrying out work related tasks at home. The respondents reported having to work from different places in their home, such as their living rooms, their kitchens, their kids' bedrooms, and in one case even in their bathroom.

“... I was sitting in front of my small computer and I was sitting either (...) in my living room or I was sitting upstairs in one of my kids' rooms, so it was rather chaotic...”

(Interviewee #1)

The participants with access to a dedicated space at home for work, on the other hand, seemed quite satisfied while working from home. One participant called having proper work facilities at home ‘fabulous’, as it allowed them to carry out research quite effectively and it shielded them from disturbances from their family. Furthermore, two of the four participants who did not have a dedicated space for work, mentioned that in the future they were planning on incorporating a home-office.

4.2.2 Work/Life Balance

The breakdown of work-life boundaries is something that many of the respondents tried to avoid. They mentioned that one of the reasons they did not have a home-office is because they would always try to compartmentalize their life to keep personal and work affairs separate. With the advent of the pandemic, however, this was naturally no longer an option.

As a result of shifting to WFH, the respondents faced a number of challenges. A recurring challenge among the respondents was having to deal with disturbances from different sources in their home. Unsurprisingly, those with children reported having to deal with disturbances from their kids. However, these disturbances were not exclusive to those with children; a couple of respondents alluded to being distracted by their spouses, and another even reported being distracted by their dog. They mentioned that it was difficult to keep a barrier between their work and their family. While having a dedicated space for work shielded the participants from disruptions, a couple of these respondents still encountered disturbances.

“... I don't have small kids so it was only when my big kids and my husband were home.

It was a problem, of course (...) it would be disturbing” (Interviewee #6)

Despite the criticisms, however, half the respondents felt that it was a positive work arrangement as they enjoyed the flexibility that came with working from home. One respondent mentioned that

WFH is not as monotonous as working at the office. Moreover, three respondents mentioned that WFH gave them more freedom to organize their day in a much smarter and more productive way, thus increasing their productivity.

4.3 Individual Dimension

4.3.1 Professional Isolation

Out of the eight participants, six of them lamented the loss of informal discussions with their colleagues at the office. They recount that when they work at the office, there are impromptu social opportunities for random discussions during lunch or when meeting someone by chance in the hallway, during coffee breaks, etc. They stress that these seemingly inconsequential encounters are actually important, because they tend to be discussions of ideas that are perhaps not completely formulated in that specific moment, but can potentially lead to new research down the line. Likewise, they could find common interests among each other through these informal discussions, which can lead to joint research.

These once common social interactions that academics at the university used to take for granted, all but vanished when they started working from home during the pandemic. They argue that in the long run, this is a big loss because fewer ideas will be pursued, and therefore fewer projects will see the light of day. Similarly, the participants also mention how isolation from an academic point of view can affect research in the short term as well. They argue that the whole “social knowledge base” falls apart while working from home. They mention how debates or discussions with their colleagues at the office can be stimulating and aid in generating new ideas. Likewise hearing criticisms and looking at different perspectives can be stimulating and give them inspiration for their ongoing research work. In contrast, while working from home they would be essentially left alone with their own thoughts and ideas; this meant that they eventually felt like they were drained of creativity.

“It’s a bit solipsistic. That means you revolve around yourself, your own research, your own ways of thinking. You don’t get much input, spontaneous input, (...) someone telling you: ‘Yeah, I read the article and it was nice, but have you thought of this?’ that’s lacking.” (Interviewee #7)

Additionally, they mention how the collegial atmosphere that characterizes an educational institution such as NTNU, dissolves while working from home. One of the interviewees mentioned how many academics lost a sense of community. They mention that despite it not being crucial, it can be nice to meet people around campus and have small chats. Likewise, another subject mentioned how it was a bit sad, because part of their job is to have research connections and to exchange ideas with their colleagues.

“Even though they (colleagues) might not have too much to say about it (their research), it’s just nice. You get a sense of (...) support, that we’re in the same boat.” (Interviewee #3)

Those that collaborated with the industry echoed similar concerns regarding the isolating nature of WFH. Those that used to carry out seminars with different companies or with international scholars moved away from physical seminars to webinars. This was perceived in a negative way because they went from being able to interact and chat with people at these events, to just sitting in front of a screen on their own for hours.

Additionally, while working from home, it is virtually impossible for academics to network effectively. Those who attended physical conferences to present their research work, mentioned that when physically attending these events, there would be active participation from the attendees and they got the chance to meet new people; in digital conferences, on the other hand, they have found that there is little to no interaction among the attendees. Furthermore, they lamented their inability to expand their existing professional network; they mention that usually networking is done during the conferences as well as in informal settings such as in coffee breaks, during dinners, etc. While working from home, this was obviously not possible, which meant that they would have less industry contacts, less cooperating partners, etc.

“I think during this period, I haven’t met a single new person. (...) I mean, of course you meet somebody in (digital) meetings, but not in the way that you will be able to contact them again. So, I think the network of most people has been reduced.” (Interviewee #5)

One of the respondents, however, went against the grain in this regard and mentioned that they believed that the cut of business travel was a positive aspect that came as a result of WFH. They described that they would usually travel long distances to attend short meetings that could have been easily carried out remotely through Zoom or Microsoft Teams; now, these meetings are carried out virtually, thus cutting down on unnecessary travel. Nonetheless, this same subject did acknowledge that there were certain trips that benefited from physical interaction and are less efficient now that they are all carried out virtually.

The spontaneous, informal chats that many academics looked back on so fondly, can be a double edged sword, however. Six out of the eight subjects mentioned that one of the advantages of WFH is that they can avoid having people disturbing them at their office while at work. They explain that while at their office, it was quite common to have colleagues pop in to say ‘Hi’ or to have students knock on their door and come in to ask quick questions. These impromptu conversations, while in some ways having positive aspects as discussed above, disrupted their workflow and prevented them from getting work done.

This is specially the case for carrying out research related tasks, because as many of the participants mentioned, in order for them to effectively carry out their research responsibilities, such as reading literature and writing papers, they must be able to concentrate and focus on their work without disturbances. They argue that this is much better while working from home, because their respective homes are quiet places where they are essentially sheltered from these interruptions. This leads to them being able to create extended stretches of uninterrupted time dedicated to research, and not have to deal with a constant stream of disturbances.

“... in terms of research, you get away from all of that stuff that interferes with your research. I mean, research is a concentration heavy practice, right? You need to be focused, need to shut out the world. You need to concentrate (...) And that is much, much better working from home, to be shielded from all the disturbances.” (Interviewee #3)

Lastly, regarding experiencing feelings of loneliness or other mental health related issues while working from home, interestingly only one out of the eight participants mentioned struggling with this type of issues. A second respondent did mention that they felt stressed due to the uncertainty of the pandemic, however, other than that, they stated that they did not struggle with such issues. Notably, half of the participants did allude to or mentioned being aware of mental health related issues within the organization; they recounted that despite not having to deal with these issues themselves, they knew or had heard about coworkers struggling with this. Overall, however, this was not really an issue that personally impacted the majority of the subjects in the study.

4.4 Job Dimension

4.4.1 Overwork

In terms of workload, more than half of the respondents alluded to experiencing increased workload in general when they transitioned to WFH. A through-line across half of the interviews was that the administrative part of their job had increased. The participants mentioned that administrative tasks started eating up mostly the time that they would usually dedicate to research; they argue that the organizational structure of the institution is designed so that everything is organized around teaching and the administration of teaching. In other words, teaching time is usually relatively fixed and there is not much flexibility in that regard. Therefore, research time gets the short end of the stick and winds up being cannibalized. It is then up to them to make space for research work in their schedule and they have to “just make it work”. This additional administrative work comes in the form of new committees, new internal projects, as well as more digital communication (the latter will be discussed further down in Section 4.5.2 (Meeting Proliferation)). Once they transitioned to WFH, there was an uptick in this type of tasks.

On a similar note, some respondents alluded to working longer hours once they transitioned to WFH. Some of the participants alluded to having to prioritize certain tasks, as well as having to decline to take part in voluntarily projects or committees, because otherwise they would sit at home and work all day.

“At the beginning I remember it was quite difficult because I felt I was always working. So usually when you are working in your office, you are working from 8:00 to 4:00 o’clock and then leaving. At the beginning (...) of the pandemic, I felt that I was always working, so I was answering emails at 9:00 o’clock in the evening.” (Interviewee #4)

The COVID-19 pandemic also played a prominent role in this aspect, because the pandemic in certain cases was to blame for the additional workload. One of the respondents in a leadership position mentioned that checking up on team members to see how they were doing took up time. Another subject mentioned that the shift to online lectures at the beginning of the pandemic took awfully long; one participant described it as a “very intensive six month period” due to the additional work inherent in transitioning to teaching from home, such as having to record lectures and having to rework their existing material (e.g., presentations) for online or pre-recorded lectures. This is further discussed in Section 4.6 (Soft versus Hard Disciplines).

“... on top of the work that I had to do, I had to follow up status at home. If they (group members) were doing well. If they were kind of going through a bad period or not. So this created additional work for me.” (Interviewee #1)

4.5 Organization Dimension

4.5.1 Organizational Implementation & Support

The pandemic made it evident that many organizations were ill-prepared to transition to WFH arrangements, and NTNU was no exception. When asked how the institution assisted with the WFH arrangement, many felt that the institution’s performance left a lot to be desired. Most participants mentioned that they felt like there was little to no support from the institution early on in the transition. They argue that they were essentially left to their own devices when they were forced to WFH.

“I have to say that we didn’t receive so much help from the university. Yeah, so we were basically doing everything by ourselves. I don’t think I’ve received help or instruction.” (Interviewee #4)

“... they (university management) said that we are required to work from home and so

on, but that's all, they didn't provide support or anything in that respect. (...) they just said: work from home and make it work.” (Interviewee #3)

This support, or lack thereof, was described in several different ways by the participants. Some described it as a lack of access to equipment, such as computers, monitors, microphones, etc. This was specially troublesome for those without a home-office in their residence, because equipment that they usually took for granted, like for example their big monitors or ergonomic chairs at work, were not something they had access to at home. This led to them having to use “small computer screens” and have to sit in uncomfortable chairs at home.

Lack of support in terms of technology training was also alluded to by the participants as an issue early on in the transition to WFH. Five of the eight respondents reported having trouble with the use of technology while trying to carry out their research and teaching related duties. Some reported struggling early on with the use of teleconferencing applications such Zoom and Microsoft Teams to carry out online classes. Others reported issues with the physical technology itself, like for example unreliable wireless connection at home or microphones with bad sound quality. One respondent sought help from a colleague because they simply could not figure it out.

It is not all doom and gloom, however. To NTNU's credit, a couple of weeks after everyone was forced to WFH, the university informed the staff that they could take their equipment home and that the institution would cover basic equipment (e.g., microphones, ergonomic chairs, monitors, etc.) if they needed it, which several of the candidates did in fact decide to do. What is a bit concerning, however, is that there were a couple of participants that, even now, approximately two years after the initial COVID-19 outbreak, were completely unaware of the fact that they could acquire equipment from the university. This information is available in NTNU's website (NTNU, 2021), however, this indicates that this information was not properly disseminated among the staff members in the different faculties across the university.

Lastly, in terms of pedagogical training as it relates to online teaching, there was lack of support from the university in that regard as well. By all accounts, training of this nature did not materialize until the fall semester of 2020.

4.5.2 Meeting Proliferation

Most of the participants reported a proliferation of virtual meetings while working from home. They describe that now everyone is setting up Zoom or Teams meetings constantly, which presents a couple of problems for the respondents. Firstly, half of the respondents mentioned that they found it exhausting to WFH; the common sentiment was that it was tough to “sit and stare at a screen all day”; one participant deemed it “Zoom Fatigue”. They argue that people are tired of ever-present virtual meetings that became the norm once the COVID-19 pandemic started. Secondly, this mushrooming in the number of virtual meetings can eat up a big chunk out of their

time at work. One participant mentioned that their productivity in terms of academic writing had been hampered due to the absurd number of virtual meetings. Another respondent mentioned that they must be careful with what they prioritize in order to not get “consumed” by the overwhelming number of meetings.

Along with virtual meetings, five participants alluded to emails also becoming an important source of distractions while working from home. In general, all types of online interactions increased significantly when academics transitioned to WFH, and many of the participants resented the consistent online presence required while working from home, as it had become a very time consuming and exhausting endeavour for most of them.

“You spend more time on online presence. And you are sort of expected to be available all the time. (...) If I worked from the office, then I am either at the office or not.”

(Interviewee #5)

In terms of communicating and collaborating effectively, the participants mentioned that the COVID-19 pandemic did not really change their collaboration practices too much. They describe that it was quite usual for them to work with scholars from international academic institutions in joint research projects, so they already had experience working digitally before shifting to WFH.

4.6 Soft versus Hard Disciplines

One of the goals of this study is to observe whether academics in different disciplines experience WFH in the same manner or whether it might vary. Seeing as the main challenges of WFH identified by the respondents have been discussed from Section 4.2 through Section 4.5, I will now talk about how the WFH experience differs between hard and soft disciplines. To do so, I will discuss them from both a research and teaching stand point, as the findings varied heavily depending on which aspect was being discussed.

4.6.1 Research

When asked how transitioning to WFH had influenced their research work productivity, the answers were mixed. When it comes to research duties, the participants in soft disciplines all agreed that working from home had influenced their productivity in a positive manner. They argued that WFH increased their research output, which goes back to what was previously found in Section 4.3.1 (Professional Isolation), regarding WFH helping the participants avoid interruptions that disturb their workflow.

The respondents in hard disciplines, on the other hand, had mixed opinions on the matter; less than half (2 of 5) of these respondents thought that their productivity in terms of research work

had improved. Something unsurprising, if not expected, was that the two participants whose research was dependent on physical access to laboratories at the institution (Interviewee #1 and #8), expressed quite vehemently that WFH was not a good working arrangement. They stated that in order for them to carry out their research duties, they needed to be at the labs physically in real time. During the initial lockdown in early 2020 they were unable to carry out any research activities at all. They both stated that as soon as the university allowed them to go back, they wasted no time in doing so.

“It was impossible for us to even consider actually doing new research because we needed the physical labs, we needed the equipment, (...) we need to be there.” (Interviewee #1)

Another interesting difference between disciplines relates to professional isolation, covered in Section 4.3.1 (Professional Isolation). All of the participants in soft disciplines alluded to missing the spontaneous and informal discussions with their coworkers that were no longer possible while working from home. The respondents in hard disciplines, on the other hand, only three out of five alluded to professional isolation being a challenge. Something to note is that the nature of the research work of these three participants is similar to those in soft disciplines (e.i., dissemination). The two participants in hard disciplines who carried out lab work, did not allude or mention that this was something they missed.

Regarding other challenges, there were not any notable patterns or differences between soft and hard disciplines.

4.6.2 Teaching

Regarding their performance in teaching related tasks, there was almost unanimous consensus from the respondents in both soft and hard disciplines, that teaching remotely is less than ideal to put it mildly; one of the interviewees went as far as to call it “an absolute disaster”.

According to the respondents, teaching remotely was an awful experience for a number of reasons. Firstly, a common sentiment among the participants was that students tend to turn their cameras off during lectures, therefore, the respondents could not see the students faces and would end up just staring at their presentations during their lectures; essentially, they felt like they were sitting for hours, talking into an empty void. This leads to the second issue, and that is: while teaching online, they seldom received feedback (if any) from students. While students could use their microphones or use the in-app chat to ask questions or make comments, they rarely made use of these features. The interviewees stress that having real interactions, where they can perceive social cues and can address students directly is a much better teaching experience.

“The social learning environment is completely dissolved. (...) I mean teaching should be a two-way street where you have interactions going back and forth, and teaching for

me is something else than just communicating some knowledge, communicating some information.” (Interviewee #3)

The crux of the issue is that, according to the respondents, classes are not a one-sided exchange; during lectures, they could ask for opinions or thoughts on the topic, as well as discuss and share experiences with the students, which is much more difficult in a digital setting. They describe that lectures are supposed to be more akin to a discussion between the students and the professors rather than a monologue by the person carrying out the lecture. With no feedback, teaching became quite unengaging and unmotivating for the participants.

Negative feelings were not exclusive to live online lectures. Those who decided to prerecord their lectures did not believe it was a good experience either. One of the issues they found was that while recording their lectures, it was easy to make mistakes without realizing it. So once they realized they had made a mistake, they would need to start over and re-record the the entire thing.

“It took me some time to learn how to record it (lectures) and many, many times I had to re-record things because I wasn’t happy with it. And sometimes I made a mistake in the middle (...) so that took me awhile to figure out.” (Interviewee #2)

A couple of participants diverged a bit and expressed a few positive aspects that they noticed. One respondent mentioned that they appreciated the flexibility and ease of teaching from home and that it was less demanding than a physical lecture. Along the same lines, another participant mentioned that it was nice because more students could easily join from different locations. However, most of those who talked about positive aspects regarding remote teaching had to take a moment to think of positive things to say; and even after coming up with positive aspects, they would still acknowledge that there are few positive aspects among many downsides.

A couple respondents were also concerned about the persistence of online teaching at the university moving forward. One participant was wary of the digital teaching solutions, that were implemented with the idea that they would be only temporary solutions to the ongoing crisis, would stick around long term. Echoing similar thoughts, another participant expressed concerns regarding the commoditization of teaching, and how it might persist because it can now be easily bought and sold by everyone regardless of geographical location.

Lastly, when asked about how they viewed the overall experience of working from home, the answers ranged from mixed to positive. There were not any noticeable differences between the answers from academics in soft and hard disciplines, however, something to note is that the main reason that the participants who said that they thought it was a mixed experience, mainly blamed the lackluster teaching experience.

4.7 Other Issues

An interesting result from the interviews is that half of the respondents alluded to a desire to have a hybrid work arrangement moving forward; this refers to having a flexible arrangement that allows them to work either at home or in the workplace as they see fit. This was interesting because asking what type of arrangement they would ideally like to have, was not something that was part of the interview questions, so none of the participants were prompted to talk about this, yet half of them agreed that a hybrid work arrangement is the way to go.

“... in the long run I would prefer a mixed solution. I would prefer the freedom to say: OK, now I must focus, I must be at home, I must concentrate, and now I want to go to the office; I want to meet my students and my colleagues, I want to discuss with them and have exchanges” (Interviewee #7)

5 Discussion

The purpose of this paper is twofold: to identify and understand what are the most prevalent challenges impacting academics while working from home and to determine if academics from different disciplines experience WFH in the same manner, and if not, to see how they might differ. This section will focus on discussing the main findings and how they relate to the existing literature.

Similar to the structure in Section 4 (Results), this section is split up in four clusters: *Home & Family*, *Individual*, *Job*, and *Organization*. These four sections include a discussion of the main challenges found in the interviews. A fifth section discusses how some of these challenges differ between soft and hard disciplines.

5.1 Home & Family Dimension

The results of the analysis show that maintaining a work/life balance and the lack of a dedicated work space were the most prominent challenges in this cluster. The goal of this subsection is to discuss the theoretical implications of the findings in the *Home & Family* dimension.

Work/Life balance was one of more common challenges reported by the participants. These results build on extensive evidence in the literature describing employees failing to reconcile the two environments (Greenhaus and Beutell, 1985; Weer and Greenhaus, 2014; Hardman et al., 2021). Regarding work-family conflicts, only one of the three types of conflicts identified by Greenhaus and Beutell (1985) was present in the in the study, and that is the *time-based conflict*. Numerous times the respondents mentioned being unable to focus on their work while working from home due to family related disturbances. The lack of issues regarding the two remaining types of conflicts

could be explained by the small sample size of the study.

In terms of access to a home-office, as mentioned in the previous chapter, half the subjects stated that they did not have a dedicated space at home to carry out work related tasks. Unsurprisingly, most of these same respondents expressed having issues as a consequence of it. The fact that the respondents who did in fact have a home-office expressed satisfaction with the work arrangement is also not surprising. This finding is consistent with Baruch and Nicholson (1997) & Laumer and Maier (2021), who mention that a dedicated space at home for work addresses the issue of too many interruptions. These findings contribute to existing evidence that a dedicated space at home mediates the relationship between work and family life.

Something to note, however, is that none of the participants alluded to issues accommodating a home-office in their residence; two of the participants even mentioned that they would be soon implementing a home-office. It would be interesting to explore the experiences of PhD candidates, as I posit that they would be likelier to live in student dorms or smaller accommodations were actually having a home-office would be impossible due to the physical limitations of their home.

Lastly, half the participants were happy with the flexibility that WFH provides, as it allowed them to organize their day in a much smarter way. This is consistent with O'Neill et al. (2009) & Allen et al. (2015), who mention that WFH offers greater flexibility to WFH employees and allows them to manage work and personal life much more effectively.

Overall, there were no particularly novel findings in this cluster. The results are consistent with the literature regarding work/family conflict. However, a reason for this is that the interview guide was not designed to put heavy emphasis on the interviewees' family/home situations. It would have been interesting to have the participants explain in more detail some of their issues at home while working.

5.2 Individual Dimension

The findings in the present study show that dealing with professional isolation while working from home was the most prominent challenge in this cluster. This subsection will focus on discussing the theoretical implications of this finding as well as discussing the absence of certain challenges present in the literature.

The main challenge identified by the respondents in this cluster was professional isolation while working from home. These results are in line with assertions in the literature that people working from home are likely to struggle with the isolation intrinsic in remote work (Baruch and Nicholson, 1997; O'Neill et al., 2009). It is clear from the interview material that not being in the same physical location to interact with their colleagues was a problem for the respondents. The discussion of half-baked ideas during coffee breaks or in the hallway is an important aspect that was lost

when the university transitioned to WFH. This is consistent with Kurland and Bailey (1999) who mention that this is an issue for WFH individuals because this type of meetings are informal and spontaneous. While it might be easy for a third party to misconstrue these informal discussions as employees lollygagging with aimless ‘chit chat’, they actually serve a purpose. The exchange of ideas and discussions with their colleagues is an important part of their jobs, and can lead to new research opportunities, generate new ideas, and be stimulating for academics in general. These accounts are consistent with Hesse and Grantham (1991) & Kurland and Bailey (1999) who both emphasize the importance of social and informal interactions among colleagues.

Similarly, networking while working from home was virtually impossible according to the respondents. Those that talked about missing conferences and seminars, echoed similar sentiments: networking is not done only during the formal conference time, it is done in informal settings as well. This is consistent with Grande (2020), who mentions that conferences are also arenas for discussions and not just presenting scientific work. While virtual conferences might offer advantages, in the form of ease of attendance, fewer flights, and lower costs, they fail at what really matters: getting academics to effectively share ideas and connect.

The interviews painted a somewhat conflicting picture regarding disturbances while working; the participants mentioned that they encountered distractions not just at home, as previously mentioned in Section 5.1 (Home & Family Dimension), but at the office as well. Disturbances at the office are consistent with several papers (Kurland and Bailey, 1999; Bailey and Kurland, 2002; Fukumura et al., 2021; Laumer and Maier, 2021) that suggest that work can be susceptible to disruptions from colleagues in the office environment. The participants consistently suggested that certain tasks such as reading literature and academic writing are better done at home than at the office, because these tasks require a quiet and disturbance free environment. In this regard, WFH is much better than working at the office. While this issue is not a challenge of WFH per se, it is important to bring it up because this was not an issue that was exclusive to a specific discipline. This would indicate that WFH is suited for specific tasks, and not jobs or disciplines as a whole.

Something unforeseen in the results of the interview process was that only one out of the eight participants alluded to struggling with mental health related issues as a result of the isolation that comes with working from home. This was a bit surprising because an extensive amount of literature alludes to some form of mental health related issue while working from home (Hayes et al., 2020; Ferreira et al., 2021, de Godoy et al., 2021; Dias et al., 2021; Walters et al., 2022). Furthermore, the combination of lock-downs, the extended use of WFH, and the overall reduction in social interactions throughout the COVID-19 pandemic would suggest that mental health challenges would be more prominent in the findings. Many participants alluded to this issue by saying that they knew others that struggled with this, however, they themselves did not explicitly state or even allude to suffering from mental health related issues. A possible explanation for the absence of this challenge is the Norwegian context in which this study was carried out. According to Hofstede

et al. (1980), in Norway, people tend to keep their work and their personal lives separate. It stands to reason that WFH would not severely impact their ability to be socially active, as they would rely on different social settings and not just their workplace for that.

This explanation, however, does not shed light on why some of the respondents alluded to knowing colleagues at the university struggling with loneliness while working from home. Despite the work related cultural values proposed by Hofstede et al. (1980) theoretically playing a role in this study, it is important to note that NTNU welcomes academics from all over the globe. According to data from 2020, of the 5,057 full-time equivalents at NTNU who are in academic positions and work with teaching, research, and dissemination, approximately 35% are international (NTNU, 2020). This proportion of international academics is not a trivial one. Interestingly, this percentage unintentionally held true in the sample that was interviewed; of the eight subjects that were interviewed, three of them were international (37.5%). It is therefore reasonable to assume that the cultural drivers proposed by Hofstede et al. (1980) might be a bit faded in the case of the NTNU as there are many people from foreign countries in the mix.

A second possible explanation for the amount of loneliness (or lack thereof) experienced by the academics in this study, is their amount of tenure at the university. I argue that experienced academics will in all likelihood not be dependent on someone else, like a supervisor, for example, in order to carry out their work related tasks. Younger and less experienced academics on the other hand, generally do need to lean on others to carry out research, and therefore, might be more prone to psychological challenges such as loneliness and self-doubt. This would be consistent with L. Schweitzer and Duxbury (2006) & O'Neill et al. (2009) who suggest that individuals with more organizational experience are more likely to WFH, as they tend to be more knowledgeable. Unfortunately, this is only conjecture and I am not able to confirm it in this study, as the participants of the study all have had extensive experience as researchers either at NTNU or in other academic institutions. Even the subjects with the least amount of tenure had extensive experience from other institutions before coming to NTNU. This lack of variety in terms of organizational tenure might be considered a weakness of the study.

5.3 Job Dimension

The results of the analysis show that dealing with an increased workload while working from home was the most prominent challenge in this cluster. This subsection will focus on discussing the theoretical implications of these findings. Something important to note, however, is that other challenges in this cluster previously touched upon in Section 2.4.3 (Job Dimension), will not be discussed in this section, but rather in Section 5.5 (Soft versus Hard Disciplines) as they relate to research and teaching duties.

Consistent with several authors in the literature (Kurland and Bailey, 1999; DeFilippis et al.,

2020; Fukumura et al., 2021), an increased workload was alluded to by many of the participants in this study. A common sentiment described by the respondents relates to research time being displaced by administrative duties; these administrative tasks consist of the usual emails and meetings (discussed further in Section 5.4 (Organization Dimension)) as well as new projects and committees. This cannibalization of research time by administrative tasks is consistent with Walters et al. (2022) & Hjelsvold, Bahmani and Lorås (2020) who also reported an increase of administrative workload in their study. This phenomenon could perhaps be explained by efforts from the university to make up for the lack of physical interactions. It is plausible that many of these new projects and committees came as a direct result of the COVID-19 pandemic.

Keeping on the topic of the COVID-19 pandemic, the increased workload while working from home was in some cases attributed to the pandemic rather than the WFH arrangement itself. Predictably, the pandemic aggravated this challenge, as the participants' workload increased due to having to adapt their teaching material and redesign their learning activities so that they would be suitable for digital teaching. The findings are consistent with Walters et al. (2022) & Hjelsvold, Bahmani and Lorås (2020), who also found that additional effort was required to transition to teaching remotely. The effort required to transition to WFH is a point that is not touched upon much by the general WFH literature. In terms of academia, this findings show that working from home is not as simple as just taking one's computer home; the time and effort required to transition to WFH can be significant, and university management should keep this in mind moving forward.

It is notable that increased workload was an issue considering the context of the study. NTNU's website states that while working from home, working hours should be the same as when working from the office (NTNU, 2021). Similarly, as Da et al. (2022) note, the 'Norwegian Working Environment Act', should in theory make certain that employers prevent work responsibilities from impacting their employees' mental and physical well-being. The increased workload reported by the participants in this study, could be explained by what one respondent pointed out, which is that their work contracts are not very regulated, and it is really up to them to decide what to prioritize. A couple other participants also alluded to this, essentially saying that they had to say 'no' to certain voluntary project or committees, otherwise they would end up working all day. It is not unreasonable to assume then that some academics might have a more difficult time with prioritization, and end up working longer than usual.

5.4 Organization Dimension

The findings in the present study show that lacking organizational support and meeting proliferation while working from home were the most prominent challenges in this cluster. This subsection will focus on discussing the implications of these findings as well as discussing the reason for why certain challenges described in the literature were not present in this study.

While many organizations in the past would generally implement WFH as an optional work arrangement with the intent of reaping the benefits of its implementation, the COVID-19 pandemic forced inexperienced organizations with WFH arrangements into implementing them in order to keep their heads above water. Educational institutions such as NTNU were no exception.

Unsurprisingly, the pandemic highlighted organizational deficiencies that prevented the university from achieving an effective transition to WFH. The majority of the respondents felt that organizational support was lacking during the transition early on. This is consistent with Afrianty et al. (2022), who describes that in the face of no support from an organization, employees are left with no choice but to find ways to do their job on their own. This was very much the case for the participants as shown in some of the quotes in Section 4.5 (Organization Dimension), essentially saying that it was up to them to figure things out.

Even with the enviable position in which the university found itself in terms of existing ICT infrastructure and its readiness to shift to WFH, there were still growing pains throughout the transition. The majority of the respondents reported struggling with the use of technology while working on research and teaching. This is not a surprise seeing as only 46% of teachers in Norway have ICT in their formal training (OECD, 2020). It is quite likely that the transition would have gone much more smoothly had it been implemented deliberately and with an in depth planning phase, as Weijers et al. (1992) & de Godoy et al. (2021) respectively mention. The findings also show that Afrianty et al. (2022) were spot-on in their paper, where they suggest that universities that transition to WFH should ensure that their staff have the necessary digital capabilities required to carry out their job. These findings contribute to existing literature that emphasizes the importance of a proper ICT support for employees who WFH.

Another common element shared by several of the interviewees related to organizational support concerns the acquisition of equipment (e.g., chairs, monitors, etc.) needed to WFH. While NTNU informed their staff that the institution would cover the costs of basic equipment needed to work remotely, this information did not reach everyone at the institution. As mentioned in Section 4.5 (Organization Dimension), two of the participants were unaware that they could acquire equipment from the university. This could be explained by what Cooper and Kurland (2002) suggest, which is that workers who are not physically present in the office run the risk of not receiving relevant information that could support their professional tasks and duties. A second explanation could be related to the fact that the transition to WFH was unplanned; with the outbreak of the COVID-19 pandemic and everyone trying to get their bearings, it would be reasonable to assume that information could have easily gotten lost among all the chaos. A third plausible explanation might be related to the decentralized nature of the university; with several different relatively independent faculties, it might have been difficult to get information to every corner of the university. Regardless of the reason, proper dissemination of all relevant information to WFH employees should be a priority for the institution moving forward.

An increase in virtual communication is not particularly surprising, seeing as ICT is essentially what makes working from home possible. Consistent with many in the literature (Kost, 2020; de Godoy et al., 2021; Butler and Jaffe, 2021), many participants reported fatigue associated with the proliferation of virtual meetings. Similarly, consistent with the study by DeFilippis et al. (2020), emails also became an issue, as most of the respondents alluded to proliferation of email activity. This proliferation of meetings and emails goes hand in hand with the increased workload challenge that many participants alluded to. Having to constantly attend digital meetings and reply to emails can be very time consuming; it is no wonder then that the respondents would end up working more and longer than usual. This is consistent with Allen et al. (2015), who allude to the breakdown of the temporal boundary between work and and personal life, leading individuals to be constantly to work through emails, which would explain why some participants mentioned working late into the night.

In addition to paying attention to what the interviewees explicitly say, it is also important to note what they did not say, and something that none of the participants alluded to were concerns regarding negative perceptions from their peers for working from home. The obvious explanation for this is that due to the COVID-19 pandemic, everyone was working from home; the pandemic, despite its many ramifications, did enable everyone to WFH and normalized this working arrangement all over the world. Furthermore, as was mentioned previously, many already worked from home even before the outbreak of the pandemic. Baruch and Nicholson (1997) state that feelings of envy and suspicion from colleagues are prominent in organizations where WFH employees make up a small portion of the whole staff, whereas in organizations where working from home is commonplace, there are no such feelings. Taken together, it is no surprise that this was not a concern among the respondents. I posit that with the proliferation of WFH arrangements around the globe, this particular challenge will not be as prominent in future WFH literature.

A second challenge from the literature that none of the participants mentioned, was fear or concern regarding their superior being able to properly assess their performance while working from home. A possible explanation for the lack of concern regarding the evaluation of their performance is that it is evaluated based on output rather than on perception. Many corporations generally evaluate work performance based on optics; in contrast, at universities such as NTNU, career development is based on the quality of the academic output, rather than on a visible presence and “looking good”. This goes along what Baruch and Nicholson (1997), Kurland and Bailey (1999), Allen et al. (2015), and Kost (2020) point out, that it is essentially impossible to track workers that work from home, therefore, WFH works better when employees are evaluated based on the quality and measurable work output.

On a similar note, another explanation for the absence of this challenges concerns the freedom and autonomy that academics enjoy at NTNU in regard to how they perform their jobs. Even before the pandemic, academics had a lot of freedom in terms of how they ran their courses and how

they carried out research work. As O’Neill et al. (2009), Baruch and Nicholson (1997), & Feldman and Gainey (1997) suggest, WFH is better suited for jobs with a high degree of autonomy. It is therefore plausible that the autonomy that academics at NTNU enjoy, was likely one of the factors that played a role in the lack of concern regarding the proper evaluation of their work performance.

A third challenge that was not present in the results of the interviews were issues collaborating effectively with coworkers, as Matli (2020) & Cooper and Kurland (2002) suggest. This is an interesting result from the analysis because it is inconsistent with the premise proposed in Section 2.4.4 (Organization Dimension), which is that academics in hard disciplines would be likelier to struggle collaborating while working from home. This assumption was based on Biglan’s (1973) claims that academics in hard disciplines tend to collaborate with colleagues more than those in soft disciplines. An explanation for this is that even before the pandemic it was common to collaborate on projects with international scholars in universities in different countries. This experience likely played a role in the effectiveness of the subjects while collaborating when they transitioned to WFH, as the shift to a complete digital setting was not something that was entirely new to them.

5.5 Soft versus Hard Disciplines

The second goal of the study was to see if academics in different disciplines experienced working from home in the same manner; the results from the interviews show that this is not the case. The different disciplines of the academics shape their perception of WFH. However, as it will be explained below, the findings indicate that rather than the discipline itself, it is really the work tasks that will determine the suitability of this work arrangement.

5.5.1 Research

In terms of research duties, the two main differences between soft and hard disciplines concern how they perceived their research productivity and the professional isolation while working from home.

The first main difference concerns research productivity; the findings of the analysis showed that all of the academics in soft disciplines considered that WFH affected their research productivity in a positive manner. This was mostly due to the fact that their research duties required high concentration, which is better done at home. This follows Kurland and Bailey (1999); Bailey and Kurland (2002); Fukumura et al. (2021); Laumer and Maier (2021) who suggest that WFH helps reduce the number of workflow disruptions.

In regard to hard disciplines, only two out of five participants agreed that WFH improved their research productivity. The COVID-19 pandemic played an important role in how the research productivity was perceived by the two respondents who required access to laboratories. The restrictions imposed during the pandemic prevented these respondents from physically accessing

their laboratories, leaving them unable to carry out any research work at all early on; it is no wonder then that they would have a negative perception of WFH. These accounts are consistent with Grande (2020) & Walters et al. (2022) who mention that the closure of facilities can be detrimental to research productivity. However, these findings are inconsistent with the abundant literature that states that WFH does not negatively impact work productivity (Hesse and Grantham, 1991; Baruch and Nicholson, 1997; Bailey and Kurland, 2002; Harpaz, 2002; Sarnosky et al., 2022). This discrepancy can be easily explained by the fact that these papers analysed WFH employees who could actually carry out their job duties from home. However, despite the findings in the present study not necessarily invalidating the evidence in the literature, they do indicate that the certain tasks simply do not lend themselves to WFH. This would go along the same lines as Baruch and Nicholson (1997), who states that WFH might be impractical for jobs that require equipment that cannot be used remotely.

An interesting observation is that the five total participants who reported increased productivity while working from home did not belong to the same discipline, however, they did carry out similar research tasks. The findings seem to indicate that it is not really the discipline itself that determines whether WFH is a suitable work arrangement, but rather the nature of the academic's tasks that plays a bigger role. This goes along the same vein as what Allen et al. (2015) points out, which is that contextual issues such as the nature of the work can make a difference when it comes to aWFH. In regards to academia, the findings in this study seem to indicate that an academic's experience during WFH will depend heavily on the type of work tasks that are performed.

The second main finding concerns professional isolation. An unforeseen result from this study was that the respondents in soft disciplines all agreed that the lack of spontaneous and informal discussions with their coworkers was a challenge of WFH, whereas only three out of five of those in hard disciplines expressed the same concern. This was a surprising outcome from the interviews because it goes against the premise proposed in Section 2.4.2 (Individual Dimension), which is that academics in hard disciplines would be more likely be impacted by the social deprivation of WFH; this was based on Biglan's (1973) claim that hard disciplines have a higher degree of "connectedness" and that they tend to collaborate with other faculty members more often than those in soft disciplines. One possible explanation for this discrepancy could be that the level of collaboration among academics has changed since Biglan published his article. Biglan's paper was published nearly fifty years ago, and thanks to the rapid development of telecommunication technologies, there has never been a better time to easily collaborate with fellow colleagues in separate cities or even on the other side of the globe. It is not unreasonable to assume then that collaboration practices and habits no longer mirror Biglan's results and that a re-examination of his results on academics might be due as the level of collaboration between academics has surely changed.

A second possible reason for this inconsistency could be attributed to the disparity in the nature

of the work between those within hard disciplines. As mentioned in Section 4.6.1 (Research), the three respondents in hard disciplines who alluded to missing the informal chats with their coworkers while at the office performed similar research related tasks to those in soft disciplines (e.i., book publishing, writing articles, attending conferences, etc.), whereas those who did not allude to this as a challenges carried out more experimental type of work. This would indicate, what has become a common theme in this study, and that is: the nature of the work is a bigger determinant in whether they might face a certain challenges (in this case professional isolation), rather than their field of study.

All the above being said, the sample size of the study is not big enough to make an accurate assessment either way, therefore it is all conjecture. Further research would be required to examine this issue in more detail.

5.5.2 Teaching

In terms of teaching duties, there weren't any differences between soft and hard disciplines. The overall consensus in this study was that teaching digitally is simply not a good experience and that carrying out teaching activities physically is a superior experience.

The COVID-19 pandemic showed that physical presence is no longer a prerequisite to performing education activities, as Baruch and Nicholson (1997) claimed. However, despite it not being technically required, the findings in this study show that physical presence is vastly preferred by academics (both from soft and hard disciplines) as it relates to teaching activities. These findings are consistent with Dias et al. (2021), who mention that the lack of physical presence interfered with their teaching duties. Similarly, accounts by the participants regarding lack of feedback from students during digital lectures are consistent with Le et al. (2022), whose subjects also struggled with unengaged students during online classes. These struggles during digital teaching could be attributed to the lack of pedagogical training provided to academics early on in the transition to WFH; however, if this really were the root of the problem, this particular challenge would not be as prominent as it was in the interviews, seeing as training was provided the semester following the outbreak of the pandemic. These findings therefore highlight the need for better and improved pedagogical training for academics, because the current way is simply not effective in creating feedback from students during digital lectures.

The overwhelming negative opinions regarding WFH due to digital teaching go against some of the existing literature (Ng, 2006; Hjelsvold, Bahmani and Lorås, 2020; Aczel et al., 2021; Afrianty et al., 2022), who paint this form of teaching in a good light. There are a couple of explanations for this discrepancy; for one, some of these studies were performed in the early stages of the COVID-19 pandemic. At the time, many academics were pleasantly surprised that digital teaching worked at all. The present study on the other hand, was carried out around two years after the initial

outbreak; I posit that the participants in this study now have a good perspective of what is gained and what is lost through digital teaching, and are therefore more privy to the many shortfalls that were perhaps not as apparent early on in the transition. A second explanation goes along the same lines, and that is that after two years of having to do the bulk of their work responsibilities from home, it is likely that the participants were simply worn out from the constant stream of digital activities. Many of the respondents alluded to this, and some of them outright said it. Therefore, once physical lectures were possible again, it is reasonable to assume that it must have been a nice change of pace from the constant digital teaching, and their opinions would skew negative as it relates to digital teaching.

Despite the occasional caveat, the overall consensus was that online teaching is simply not a good experience for academics. While the pandemic drove the normalization of digital teaching and showed that it can be done at a large scale, the findings in this study show that it is not inherently better than traditional teaching. It is important to understand that in the short term, teaching remotely worked, however, in the long run a more thorough investigation of the feasibility of this teaching arrangement must be carried out.

6 Conclusion

This exploratory study had as its main purpose to identify the main challenges of WFH for academics, as well as to determine whether academics in different disciplines experience WFH in the same manner. The research was performed using semi-structured interviews, which turned out to be an effective approach, as the participants were quite cooperative and contributed with detailed accounts of their experiences while working from home. The descriptions given by the respondents provide insight into the specific challenges that plague academics in this type of work arrangement.

Based on the findings, the main challenges for academics identified in this study are: (1) lack of a dedicated work space at home, (2) trying to maintain a work/life balance, (3) professional isolation, (4) increased workload, (5) lack of organizational support, (6) proliferation of digital communication. As for whether academics experience WFH in the same manner, the findings suggest that there are slight differences between soft and hard disciplines as it relates to research productivity and professional isolation. Academics in soft disciplines all agreed that WFH improved their research productivity, whereas less than half (2 of 5) of those in hard disciplines said the same. Similarly, academics in soft disciplines all agreed that professional isolation is a challenge of WFH, whereas only three out of five of those in hard disciplines alluded to the same. These results, however, do not tell the whole story.

This study gives a compelling view of research and teaching during the COVID-19 pandemic through the lens of academics, and shows that scholars have varying and sometimes opposing experiences in regards to WFH. As with most things in life, this is not a black and white issue;

WFH is not a solution that can be indiscriminately implemented across industries with the hope of reaping the same benefits that others have in the past. Academics should not be lumped together with other traditional office jobs when speaking about the suitability of WFH. While some challenges are shared with other types of office jobs (professional isolation, increased workload, etc.), this study shows that many others are not (e.g., limited career advancement, collaboration issues, etc.).

One of the main conclusions of this paper is that academics in the same discipline should not be considered a homogeneous group. The findings in this study suggest that for the most part, academics within the same disciplines do not experience WFH in the same manner. Rather than the disciplines, it is the nature of an academic's tasks and duties that will be the key determinant in how they experience WFH and whether WFH is even a realistic work arrangement for them moving forward.

The contributions in this paper are important because even as things are going back to normal, many organizations around the world are currently wrestling with whether to allow WFH, a working arrangement that exploded during the COVID-19 pandemic, to become a permanent practice moving forward. Speaking specifically about academia, it is important to understand that academics experience WFH differently to other industries because if WFH is to become the norm at universities as well, it is crucial to not just presume that existing WFH literature is applicable to academics. Moreover, this study showed that the idiosyncrasies of an academic's job make it distinctive enough that it is unwise to assume that WFH could be simply implemented at a university wide level and work equally well for everyone.

6.1 Practical Implications

6.1.1 General Implications

The findings of the present study suggest that access to a dedicated space to carry out work responsibilities at home plays an important role in how WFH is perceived by academics. Furthermore, access to the necessary equipment at home is also crucial if WFH is to become the norm in academic institutions.

This study also highlights the importance of proper dissemination of information. Academic institutions such as NTNU should ensure the formal dissemination of all pertinent information and emphasize that this information reaches those who WFH. Emails might not be sufficient because, as I discovered while trying to contact participants for this study, it is extremely easy for them to be lost in an ocean of digital correspondence; therefore, the university management might need to take it a step further. In what form that may be is difficult to determine, however; the obvious answer would be mandatory meetings, however, this would only aggravate one of the key challenges

identified in this paper (meeting proliferation). A different approach would be to periodically bring in WFH individuals on-site to keep them up to date on relevant information. Naturally this would not have been possible during the pandemic due to the government imposed restrictions, which would therefore not have fixed the problem. Nonetheless, this could be a possible approach moving forward.

In regards to academic research work, the present study reveals that in certain cases, WFH can be the optimal way of working. Many of the participants seemed quite pleased with the WFH experience. This study contributes to extensive literature suggesting that WFH can be a positive arrangement for employees. In regards to teaching, however, the downsides should not be underplayed and university management must be more discerning when it comes to deciding whether digital teaching is a sensible long term solution.

6.1.2 Project Management Implications

Speaking specifically about the research of Project Management, this paper itself is the perfect example of how it is possible to carry out research while working from home, as all interviews were carried out remotely at home. In regards to teaching, it is important to understand that projects are social endeavours with a lot of give and take between an assortment of parties, therefore I believe that teaching in this field should somewhat mimic this social environment. Echoing the thoughts of most of the respondents, digital teaching does not lend itself to the back and forth interactions that characterize university classes. And while digital teaching has worked throughout the pandemic, one thing is whether it is possible to do something, another entirely is whether it is the optimal way of doing something, and this I believe is not the case for digital teaching. Simply put, too much is lost while teaching remotely. It might seem immaterially to some, but the scholarly environment is essentially non-existent while teaching digitally, and this I believe, is a big loss for not just academics, but for students as well.

6.2 Limitations of the Study & Future Research

There are a number of limitations identified in this paper. Firstly, one of the reasons for selecting academics from different faculties was to get a bigger picture of the WFH situation at the university as a whole. However, due to the time constraints of the thesis, academics from only seven out of the nine faculties were interviewed. Had all the faculties been represented by at least one participant during the interview process, the results of the research study could have been more robust.

A second limitation was that all the interviews were carried out in English. I believe that this is a weakness of the study because English was not the first language of any of the participants. While the interviews went fine for the most part, I do feel that had Norwegian been used during the interview process, I would have gotten more thorough answers from some of the participants

who did not seem as comfortable with using a foreign language.

A third limitation concerns the Norwegian context where this study was carried out. Academics at NTNU generally enjoy high levels of autonomy in terms of how they decide to carry out research and teaching work. This, however, is not the norm everywhere in the world. Therefore, some of the findings in this study might not be transferable to institutions in different countries.

A fourth limitation concerns the limited use of Biglan's (1973) classification. In Section 2.2, I argued that incorporating all three of the proposed dimensions would have been of value, however, the findings of this study lead me to believe that this is not the right approach for future research. While this study's adoption of Biglan's classification to differentiate between academic disciplines created interesting results, the analysis demonstrated that the work duties of the participants varied wildly even within the same discipline and were more heterogeneous than initially thought. The findings seem to indicate that it is not really the discipline itself that determines whether WFH is a suitable work arrangement, but rather the nature of the academic's work that plays a bigger role. The studies in the literature that make sweeping generalizations about academics might give some insight into common issues of WFH, but the fact of the matter is that to acquire a deeper understanding of how WFH impacts academics, a more fine-grained and nuanced research is required. I propose that a better course of action for future research would be to investigate academics based on their specific work tasks and duties as they relate to research and teaching. Grouping academics based on similar tasks, regardless of academic discipline, should shed light on the specific challenges that affect them.

Another suggestion for future research would be to also consider less experienced academics at different levels of employment. The present study only included quite experienced academics, therefore, the findings might not be representative of the institution as a whole. Looking into the experience of academics with less amount of tenure, such as PhD candidates, could very likely produce different results that might also be interesting. Psychologically speaking, the experience of WFH for someone who has worked a long time and has vast amount of experience can be quite different to newcomers that might be more dependent on others and need more professional support.

Lastly, universities would be wise to pay attention to what academics have to say regarding WFH; academics are the ones carrying out educational activities and are thus privy to knowing which activities are better done at home, and which are better done physically in the university environment. Furthermore, the COVID-19 pandemic allowed academics to experience the digital working environment in an entirely new way, which gives them a unique perspective and creates opportunities for universities to improve how things are done in the future. In this study, several of the respondents alluded to wanting to keep a hybrid approach moving forward. As this study makes clear, some tasks are much better done at home (e.g., reading literature) than others (e.g., teaching), so the freedom to decide where to carry them out should be something that remains

from this experience.

6.3 Concluding Remarks

What was exciting about carrying out his study is that it gave the participants an outlet to express their opinions on working from home during and after the pandemic. The issue that stood out the most concerns the way that they see the university is moving forward in this post-pandemic world. They were mostly concerned about remote teaching and whether it was something that is here to stay rather than a temporary solution as initially thought. The concern is that universities might look at how teaching remotely worked throughout the pandemic, and believe that it can keep working. The thing is that, it did not work because it is inherently better, but rather because both academics and students made it work. The two quotes below stuck out in mind throughout the development of this study because I believe that they exemplify their concerns regarding remote teaching quite well:

“... some of the things that were originally thought in this pandemic as temporary, they are going to be permanently implemented, and nobody (...) is actually analyzing that this can actually happen. (...) we are just following the flow and we are not analyzing which things should remain and which things should go back again. We are not using the time to reflect and to really analyze what we could really change ...” (Interviewee #1)

“... they (the university administration) think: “Oh online teaching is so great, the whole world is a market, you can get students from everywhere and we can offer all these courses and it’s available to everyone” and all of that will (...) in my opinion ruin teaching at the academic level” (Interviewee #3)

Bibliography

- Aczel, Balazs et al. (Mar. 2021). ‘Researchers working from home: Benefits and challenges’. In: *PLOS ONE* 16.3, pp. 1–13. DOI: [10.1371/journal.pone.0249127](https://doi.org/10.1371/journal.pone.0249127). URL: <https://doi.org/10.1371/journal.pone.0249127>.
- Afrianty, Tri Wulida et al. (2022). ‘Working from home effectiveness during Covid-19: Evidence from university staff in Indonesia’. In: *Asia Pacific Management Review* 27.1, pp. 50–57. ISSN: 1029-3132. DOI: <https://doi.org/10.1016/j.apmr.2021.05.002>. URL: <https://www.sciencedirect.com/science/article/pii/S1029313221000452>.
- Aguilera, Anne et al. (Oct. 2016). ‘Home-based telework in France: Characteristics, barriers and perspectives’. In: 92, pp. 1–11. DOI: [10.1016/j.tra.2016.06.021](https://doi.org/10.1016/j.tra.2016.06.021). URL: <https://doi.org/10.1016/j.tra.2016.06.021>.
- Allen, Tammy D. et al. (2015). ‘How Effective Is Telecommuting? Assessing the Status of Our Scientific Findings’. In: *Psychological Science in the Public Interest* 16.2, pp. 40–68. DOI: [10.1177/1529100615593273](https://doi.org/10.1177/1529100615593273). eprint: <https://doi.org/10.1177/1529100615593273>. URL: <https://doi.org/10.1177/1529100615593273>.
- Avery, Christine and Diane Zabel (2000). *The Flexible Workplace: A Source-book of Information and Research*. Praeger.
- Bailey, Diane and Nancy Kurland (June 2002). ‘A Review of Telework Research: Findings, New Directions, and Lessons for the Study of Modern Work’. In: *Journal of Organizational Behavior* 23, pp. 383–400. DOI: [10.1002/job.144](https://doi.org/10.1002/job.144).
- Baker, Mary (July 2020). ‘Gartner Survey Reveals 82% of Company Leaders Plan to Allow Employees to Work Remotely Some of the Time’. In: URL: <https://www.gartner.com/en/newsroom/press-releases/2020-07-14-gartner-survey-reveals-82-percent-of-company-leaders-plan-to-allow-employees-to-work-remotely-some-of-the-time>.
- Baruch, Yehuda and Nigel Nicholson (1997). ‘Home, Sweet Work: Requirements for Effective Home Working’. In: *Journal of General Management* 23, pp. 15–30.
- Biglan, Anthony (June 1973a). ‘Characteristics of Subject Matter in Different Academic Areas’. In: *Journal of Applied Psychology* 57, pp. 195–203.
- (June 1973b). ‘Relationship Between Subject Matter Characteristics and the Structure and Output of University Departments’. In: *Journal of Applied Psychology* 57, pp. 204–213.
- A Service-Oriented Architecture for Teleworking Applications*. (Jan. 2005), pp. 105–110.
- Bryman, A. (2016). *Social Research Methods*. Oxford University Press. ISBN: 9780199689453. URL: <https://books.google.no/books?id=N2zQCgAAQBAJ>.
- Butler, Jenna and Sonia Jaffe (May 2021). ‘Challenges and Gratitude: A Diary Study of Software Engineers Working From Home During Covid-19 Pandemic’. In: URL: <https://www.microsoft.com/en-us/research/publication/challenges-and-gratitude-a-diary-study-of-software-engineers-working-from-home-during-covid-19-pandemic/>.

-
- Carillo, Kevin et al. (2021). 'Adjusting to epidemic-induced telework: empirical insights from teleworkers in France'. In: *European Journal of Information Systems* 30.1, pp. 69–88. DOI: [10.1080/0960085X.2020.1829512](https://doi.org/10.1080/0960085X.2020.1829512). URL: <https://doi.org/10.1080/0960085X.2020.1829512>.
- Canyon, Martin J. et al. (2020). 'Lockdowns and COVID-19 Deaths in Scandinavia'. In: *SSRN Electronic Journal*. DOI: [10.2139/ssrn.3616969](https://doi.org/10.2139/ssrn.3616969). URL: <https://doi.org/10.2139/ssrn.3616969>.
- Cooper, Cecily D. and Nancy Kurland (2002). 'Telecommuting, professional isolation, and employee development in public and private organizations'. In: *Journal of Organizational Behavior* 23.4, pp. 511–532. DOI: <https://doi.org/10.1002/job.145>. URL: <https://onlinelibrary.wiley.com/doi/abs/10.1002/job.145>.
- Da, Shu et al. (2022). 'To Change or Not to Change: A Study of Workplace Change during the COVID-19 Pandemic'. In: *International Journal of Environmental Research and Public Health* 19.4. ISSN: 1660-4601. DOI: [10.3390/ijerph19041982](https://www.mdpi.com/1660-4601/19/4/1982). URL: <https://www.mdpi.com/1660-4601/19/4/1982>.
- de Godoy, Lígia et al. (May 2021). 'COVID-19 and Teleworking from Home: Understanding New Issues from a Macroergonomic Perspective'. In: pp. 672–679. DOI: [10.1007/978-3-030-74602-5_92](https://doi.org/10.1007/978-3-030-74602-5_92).
- DeFilippis, Evan et al. (2020). 'Collaborating During Coronavirus: The Impact of COVID-19 on the Nature of Work'. In: *SSRN Electronic Journal*. DOI: [10.2139/ssrn.3654470](https://doi.org/10.2139/ssrn.3654470). URL: <https://doi.org/10.2139/ssrn.3654470>.
- Delgado, Luis (2021). 'Challenges of Working from Home in the Context of the COVID-19 Pandemic'. In:
- Dias, Ana et al. (2021). 'The Online Education System: COVID-19 Demands, Trends, Implications, Challenges, Lessons, Insights, Opportunities, Outlooks, and Directions in the Work from Home'. In: *Sustainability* 13.21. ISSN: 2071-1050. DOI: [10.3390/su132112197](https://www.mdpi.com/2071-1050/13/21/12197). URL: <https://www.mdpi.com/2071-1050/13/21/12197>.
- Diener, Ed and Rick Crandall (1978). *Ethics in Social and Behavioral Research*. University of Chicago Press.
- Doberneck, Diane M. and John H. Schweitzer (2017). 'Disciplinary variations in publicly engaged scholarship: An analysis using the Biglan classification of academic disciplines'. In: *Journal of Higher Education Outreach and Engagement* 21, pp. 78–103.
- Elman, C., J. Gerring and J. Mahoney (2020). *The Production of Knowledge: Enhancing Progress in Social Science*. Strategies for Social Inquiry. Cambridge University Press. ISBN: 9781108486774. URL: <https://books.google.no/books?id=vITMDwAAQBAJ>.
- Eurofound (2020). *Living, working and COVID-19*. Publications Office. DOI: [10.2806/467608](https://data.europa.eu/doi/10.2806/467608). URL: <https://data.europa.eu/doi/10.2806/467608>.
- Feldman, Daniel Charles and Thomas W. Gainey (1997). 'Patterns of telecommuting and their consequences: Framing the research Agenda.' In: *Human Resource Management Review* 7, pp. 369–388.

-
- Ferreira, Rafael et al. (2021). 'Decision Factors for Remote Work Adoption: Advantages, Disadvantages, Driving Forces and Challenges'. In: *Journal of Open Innovation: Technology, Market, and Complexity* 7.1. ISSN: 2199-8531. DOI: [10.3390/joitmc7010070](https://doi.org/10.3390/joitmc7010070). URL: <https://www.mdpi.com/2199-8531/7/1/70>.
- Fukumura, Yoko E. et al. (July 2021). 'Negotiating Time and Space When Working From Home: Experiences During COVID-19'. In: *OTJR: Occupation, Participation and Health* 41.4, pp. 223–231. DOI: [10.1177/15394492211033830](https://doi.org/10.1177/15394492211033830). URL: <https://doi.org/10.1177/15394492211033830>.
- Golden, Timothy D. and Kimberly A. Eddleston (2020). 'Is there a price telecommuters pay? Examining the relationship between telecommuting and objective career success'. In: *Journal of Vocational Behavior* 116. ISSN: 0001-8791. DOI: <https://doi.org/10.1016/j.jvb.2019.103348>. URL: <https://www.sciencedirect.com/science/article/pii/S0001879119301265>.
- Grande, Tor (Sept. 2020). *Research in the time of Corona*. URL: <https://www.universitetsavisa.no/ytring/research-in-the-time-of-corona/103215> (visited on 24/05/2022).
- (Sept. 2021). *Research during the pandemic and a post-pandemic world*. URL: <https://www.universitetsavisa.no/doktorgradstipendiater-korona-ntnu/research-during-the-pandemic-and-a-post-pandemic-world/200001> (visited on 24/05/2022).
- Greenhaus, Jeffrey H. and Nicholas J. Beutell (1985). 'Sources of Conflict between Work and Family Roles'. In: *The Academy of Management Review* 10.1, pp. 76–88. ISSN: 03637425. URL: <http://www.jstor.org/stable/258214>.
- Hardman, Timothy et al. (2021). 'Challenges of working from home during the covid-19 pandemic: A survey to inform working practices'. English. In: *Medical Writing* 30.1, pp. 18–29. URL: <https://journal.emwa.org/social-media/challenges-of-working-from-home-during-the-covid-19-pandemic-a-survey-to-inform-working-practices/>.
- Harpaz, Itzhak (Apr. 2002). 'Advantages and Disadvantages of Telecommuting for the Individual, Organization and Society'. In: *Work Study* 51, pp. 74–80. DOI: [10.1108/00438020210418791](https://doi.org/10.1108/00438020210418791).
- Hayes, Sherrill et al. (July 2020). "'I'm not Working from Home, I'm Living at Work": Perceived Stress and Work-Related Burnout before and during COVID-19'. In: DOI: [10.31234/osf.io/vnkwa](https://doi.org/10.31234/osf.io/vnkwa). URL: <https://doi.org/10.31234/osf.io/vnkwa>.
- Hesse, Bradford W. and Charles E. Grantham (1991). 'Electronically Distributed Work Communities: Implications for Research on Telework'. In: *Internet Research* 1, pp. 4–17.
- Hjelsvold, Rune, Abdullah Bahmani and Madeleine Lorås (Apr. 2020). 'First impressions from educators as NTNU transitions to an online only mode of learning'. In:
- Hofstede, Geert et al. (1980). *Culture's Consequences: International Differences in Work-related Values*. SAGE Publications.
- Hofstede Insights (2022). *Country Comparison - Norway*. URL: <https://www.hofstede-insights.com/country-comparison/norway/> (visited on 07/06/2022).
- Høyere Utdanning og Kompetanse, Direktoratet for (2020). *Yrkesbeskrivelse: Professor*. URL: <https://utdanning.no/yrker/beskrivelse/professor> (visited on 13/05/2022).
-

-
- ILO (June 2020). 'Defining And Measuring Remote Work, Telework, Work at home and home-based Work'. In: *COVID-19: Guidance for labour statistics data collection*, p. 14. URL: https://www.ilo.org/wcmsp5/groups/public/%E2%80%94dgreports/%E2%80%94stat/documents/publication/wcms_747075.pdf.
- Johnson, R. Burke and Anthony J. Onwuegbuzie (Oct. 2004). 'Mixed Methods Research: A Research Paradigm Whose Time Has Come'. In: *Educational Researcher* 33.7, pp. 14–26. DOI: [10.3102/0013189x033007014](https://doi.org/10.3102/0013189x033007014). URL: <https://doi.org/10.3102/0013189x033007014>.
- Kost, Danielle (Sept. 2020). *You're Right! You Are Working Longer and Attending More Meetings*. Ed. by Harvard Business School Working Knowledge. URL: <https://hbswk.hbs.edu/item/you-re-right-you-are-working-longer-and-attending-more-meetings> (visited on 24/05/2022).
- Kurland, Nancy and Diane Bailey (1999). 'The advantages and challenges of working here, there anywhere, and anytime'. In: *Organizational Dynamics* 28.2, pp. 53–68. DOI: [10.1016/s0090-2616\(00\)80016-9](https://doi.org/10.1016/s0090-2616(00)80016-9). URL: [https://doi.org/10.1016/s0090-2616\(00\)80016-9](https://doi.org/10.1016/s0090-2616(00)80016-9).
- Kvale, S. (1996). *InterViews: An Introduction to Qualitative Research Interviewing*. SAGE Publications. ISBN: 9780803958203. URL: https://books.google.no/books?id=IU%5C_QRm-OEDIC.
- Laumer, Sven and Christian Maier (2021). 'Why Do People (Not) Want to Work from Home? An Individual-Focused Literature Review on Telework'. In: *Proceedings of the 2021 on Computers and People Research Conference*. Virtual Event, Germany: Association for Computing Machinery, pp. 41–49. ISBN: 9781450384063. DOI: [10.1145/3458026.3462155](https://doi.org/10.1145/3458026.3462155). URL: <https://doi.org/10.1145/3458026.3462155>.
- Le, Van Thinh et al. (2022). 'The interaction patterns of pandemic-initiated online teaching: How teachers adapted'. In: *System* 105. ISSN: 0346-251X. DOI: <https://doi.org/10.1016/j.system.2022.102755>. URL: <https://www.sciencedirect.com/science/article/pii/S0346251X22000367>.
- Lofland, J. et al. (1995). *Analyzing Social Settings: A Guide to Qualitative Observation and Analysis*. Sociology Series. Wadsworth. ISBN: 9780534247805. URL: https://books.google.no/books?id=IN%5C_qAAAAIAAJ.
- Malterud, Kirsti (2001). 'Qualitative research: standards, challenges, and guidelines'. In: *The Lancet* 358.9280, pp. 483–488. ISSN: 0140-6736. DOI: [https://doi.org/10.1016/S0140-6736\(01\)05627-6](https://doi.org/10.1016/S0140-6736(01)05627-6).
- Matli, Walter (Nov. 2020). 'The changing work landscape as a result of the Covid-19 pandemic: insights from remote workers life situations in South Africa'. In: *International Journal of Sociology and Social Policy* 40.9/10, pp. 1237–1256. DOI: [10.1108/ijssp-08-2020-0386](https://doi.org/10.1108/ijssp-08-2020-0386). URL: <https://doi.org/10.1108/ijssp-08-2020-0386>.
- Menzel, Herbert (Dec. 1959). *Proceedings of the International Conference on Scientific Information*. National Academies Press. DOI: [10.17226/10866](https://doi.org/10.17226/10866). URL: <https://doi.org/10.17226/10866>.
- Milasi, Santo et al. (2020). 'Telework in the EU before and after the COVID-19: Where We Were, Where We Head To'. In: p. 8. URL: https://ec.europa.eu/jrc/sites/jrcsh/files/jrc120945_policy_brief_-_covid_and_telework_final.pdf.

-
- Morgan, Robert E. (Aug. 2004). 'Teleworking: an assessment of the benefits and challenges'. In: *European Business Review* 16.4, pp. 344–357. DOI: [10.1108/09555340410699613](https://doi.org/10.1108/09555340410699613). URL: <https://doi.org/10.1108/09555340410699613>.
- Murphy, Mark (Nov. 2020). 'The Surprising Truth About How Many Employees Want To Keep Working From Home'. In: URL: <https://www.forbes.com/sites/markmurphy/2020/11/18/the-surprising-truth-about-how-many-employees-want-to-keep-working-from-home/>.
- Ng, Cheuk Fan (Sept. 2006). 'Academics Telecommuting in Open and Distance Education Universities: Issues, challenges and opportunities'. In: *The International Review of Research in Open and Distributed Learning* 7.2. DOI: [10.19173/irrodl.v7i2.300](https://doi.org/10.19173/irrodl.v7i2.300). URL: <https://doi.org/10.19173/irrodl.v7i2.300>.
- NTNU (2020). *NTNU - facts and figures*. URL: <https://www.ntnu.edu/facts> (visited on 12/04/2022).
- (2021). *Home office*. URL: <https://i.ntnu.no/wiki/-/wiki/English/Home+office> (visited on 23/05/2022).
- (2022). *Collection of Personal Data for Research Projects*. URL: <https://i.ntnu.no/wiki/-/wiki/English/Collection+of+personal+data+for+research+projects> (visited on 20/05/2022).
- O'Neill, Thomas A. et al. (2009). 'Predicting teleworker success: An exploration of personality, motivational, situational, and job characteristics'. In: *New Technology, Work and Employment* 24.2, pp. 144–162. DOI: <https://doi.org/10.1111/j.1468-005X.2009.00225.x>. URL: <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1468-005X.2009.00225.x>.
- OECD (2020). 'School Education During COVID-19: Were Students and Teachers Ready'. In: URL: <https://www.oecd.org/education/Norway-coronavirus-education-country-note.pdf>.
- Olson, Margrethe H. (Mar. 1983). 'Remote Office Work: Changing Work Patterns in Space and Time'. In: *Commun. ACM* 26.3, pp. 182–187. ISSN: 0001-0782. DOI: [10.1145/358061.358068](https://doi.org/10.1145/358061.358068). URL: <https://doi.org/10.1145/358061.358068>.
- Pérez, M.P. et al. (2002). 'Benefits and barriers of telework: perception differences of human resources managers according to company's operations strategy'. In: *Technovation* 22.12, pp. 775–783. ISSN: 0166-4972. DOI: [https://doi.org/10.1016/S0166-4972\(01\)00069-4](https://doi.org/10.1016/S0166-4972(01)00069-4). URL: <https://www.sciencedirect.com/science/article/pii/S0166497201000694>.
- Raišienė, Agota Giedrė et al. (2020). 'Working from Home—Who Is Happy? A Survey of Lithuania's Employees during the COVID-19 Quarantine Period'. In: *Sustainability* 12.13. ISSN: 2071-1050. DOI: [10.3390/su12135332](https://doi.org/10.3390/su12135332). URL: <https://www.mdpi.com/2071-1050/12/13/5332>.
- Sarnosky, Kamrie et al. (Feb. 2022). 'Impact of workplace displacement during a natural disaster on computer performance metrics: A 2-year interrupted time series analysis'. In: *Work* 71.2. Ed. by Kermit Davis and Susan Kotowski, pp. 465–470. DOI: [10.3233/wor-210707](https://doi.org/10.3233/wor-210707). URL: <https://doi.org/10.3233/wor-210707>.
- Schweitzer, Linda and Linda Duxbury (2006). 'Benchmarking the Use of Telework Arrangements in Canada'. In: *Canadian Journal of Administrative Sciences* 23, pp. 105–117. DOI: [10.1111/j.1936-4490.2006.tb00684.x](https://doi.org/10.1111/j.1936-4490.2006.tb00684.x).
-

-
- Stebbins, R.A. (2001). *Exploratory Research in the Social Sciences*. Qualitative Research Methods. SAGE Publications. ISBN: 9780761923992. URL: https://books.google.no/books?id=hDE13%5C_a%5C_oEsC.
- Walters, Cyril et al. (2022). ‘The impact of the pandemic-enforced lockdown on the scholarly productivity of women academics in South Africa’. In: *Research Policy* 51.1. ISSN: 0048-7333. DOI: <https://doi.org/10.1016/j.respol.2021.104403>. URL: <https://www.sciencedirect.com/science/article/pii/S0048733321001992>.
- Warner-Søderholm, Gillian (2012). ‘Culture Matters: Norwegian Cultural Identity Within a Scandinavian Context’. In: *SAGE Open* 2.4, p. 2158244012471350. DOI: [10.1177/2158244012471350](https://doi.org/10.1177/2158244012471350). eprint: <https://doi.org/10.1177/2158244012471350>. URL: <https://doi.org/10.1177/2158244012471350>.
- Weer, Christy and Jeffrey H. Greenhaus (2014). ‘Family-to-Work Conflict’. In: *Encyclopedia of Quality of Life and Well-Being Research*. Ed. by Alex C. Michalos. Dordrecht: Springer Netherlands, pp. 2210–2211. ISBN: 978-94-007-0753-5. DOI: [10.1007/978-94-007-0753-5_3330](https://doi.org/10.1007/978-94-007-0753-5_3330). URL: https://doi.org/10.1007/978-94-007-0753-5_3330.
- Weijers, Thea et al. (1992). ‘Telework remains ‘made to measure’: The large-scale introduction of telework in the Netherlands’. In: *Futures* 24.10, pp. 1048–1055. ISSN: 0016-3287. DOI: [https://doi.org/10.1016/0016-3287\(92\)90136-4](https://doi.org/10.1016/0016-3287(92)90136-4). URL: <https://www.sciencedirect.com/science/article/pii/0016328792901364>.
- Widar, Linda et al. (May 2022). ‘How Is Telework Experienced in Academia?’ In: *Sustainability* 14.10, p. 5745. DOI: [10.3390/su14105745](https://doi.org/10.3390/su14105745). URL: <https://doi.org/10.3390/su14105745>.

7 Appendix

A Interview Guide

Interview Guide

Introductory Questions

1. What is your area of research at NTNU?
2. How long have you worked at NTNU?
3. Could you briefly describe your job and position?
4. Have you had experience WFH before the pandemic?

Working from Home (WFH)

1. Could you please briefly describe how the university provided WFH?
2. Could you please describe how you carried out your work while at home?
3. How has your experience of WFH developed over time?
4. What are the advantages of working from home in your case as it relates to research and teaching?
5. What are the disadvantages of working from home in your case as it relates to research and teaching?
6. How has WFH influenced your work performance/productivity?
7. Overall, would you say that the experience of WFH has been positive or negative?
8. Do you have any additional advantages or disadvantages of WFH you would like to add?

B Consent Form

Are you interested in taking part in the research project: “Academics Working from Home – Challenges to Academic Work”?

This is an inquiry about participation in a research project where the main purpose is to identify the most prominent challenges of working from home (WFH) among different academic disciplines and see where they agree and where they diverge. In this letter we will give you information about the purpose of the project and what your participation will involve.

Purpose of the project

In recent years, working from home (WFH) became the default work arrangement for many academics/researchers; this work setting shift has been due to the ongoing COVID-19 pandemic forcing millions into social isolation. WFH, despite having many advantages, also poses a number of disadvantages. The challenges of this type of work arrangement have been well documented in the literature, however, they can vary wildly depending on the industry; likewise, in the case of academics, the challenges can differ depending on the researchers' respective fields of study. The purpose of this master's thesis is to identify the most prominent challenges among different academic disciplines and see where they agree and where they diverge. To accomplish this, interviews of researchers in different academic fields will be carried out.

Who is responsible for the research project?

The Norwegian University of Science and Technology (NTNU) is the institution responsible for the project. The master's thesis is being carried out by Luis Delgado with supervision from Bjørn Otto Elvenes (of NTNU).

Why are you being asked to participate?

You have been asked to participate in this study because of your job as an academic/researcher at NTNU and because of your experience with working from home. An effort was made to select participants that could offer varied perspectives.

What does participation involve for you?

If you chose to take part in the project, this will involve that you take part in a digital interview. It will take approx. 40 minutes and will be semi-structured (i.e., guiding questions will be asked). The interview includes questions about your experiences while working from home and the impact it has had on your work as an academic. The audio of the interview will be recorded electronically.

Participation is voluntary

Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you chose not to participate or later decide to withdraw.

Your personal privacy – how we will store and use your personal data

We will only use your personal data for the purpose(s) specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

- The supervisor (Bjørn Otto Elvenes) and the student (Luis Delgado) will have access to the personal data.

- To ensure that no unauthorized persons can access the personal data, your name and contact details will be replaced with a code (e.g., Jane = Employee 1). The list of names, contact details and respective codes will be stored separately from the rest of the collected data.

No participants will be directly identifiable in the master's thesis.

What will happen to your personal data at the end of the research project?

The project is scheduled to end June 11, 2022. Any personal data will be kept for one month after the project has been submitted in case of any verification or follow-up requests from the people responsible for grading said project. After the one-month period has ended, any traces of personal data (e.g., code sheet) will be destroyed.

Your rights

So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

What gives us the right to process your personal data?

We will process your personal data based on your consent.

Based on an agreement with the Norwegian University of Science and Technology (NTNU), NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Where can I find out more?

If you have questions about the project, or want to exercise your rights, contact:

- NTNU via Bjørn Otto Elvenes by email: (bjorn.elvenes@ntnu.no) or Luis Delgado by email: (luisrd@stud.ntnu.no).
- Our Data Protection Officer: Thomas Helgesen, by email: (thomas.helgesen@ntnu.no).
- NSD – The Norwegian Centre for Research Data AS, by email: (personverntjenester@nsd.no) or by telephone: +47 55 58 21 17.

Yours sincerely,

Project Leader
(Bjørn Otto Elvenes)

Student (Luis Delgado)

Consent form

I have received and understood information about the project [*insert project title*] and have been given the opportunity to ask questions. I give consent:

- to participate in interview.
- for my personal data to be stored one month after the end of the project in case of follow-up requests.

I give consent for my personal data to be processed until the end date of the project, approx. June 11, 2022.

(Signed by participant, date)

C NSD Assessment

[Notification form](#) / [Academics Working from Home – Challenges to Academic Work](#) / Assessment

Assessment

Reference number

115685

Project title

Academics Working from Home – Challenges to Academic Work

Data controller (institution responsible for the project)

Norges teknisk-naturvitenskapelige universitet / Fakultet for økonomi (ØK) / Institutt for industriell økonomi og teknologiledelse

Project period

15.01.2022 - 11.06.2022

[Notification Form](#) 

Date

18.02.2022

Type

Standard

Comment

ABOUT OUR ASSESSMENT

Data Protection Services has an agreement with the institution where you are carrying out research or studying. As part of this agreement, we provide guidance so that the processing of personal data in your project is lawful and complies with data protection legislation.

Data Protection Services has now assessed the planned processing of personal data. Our assessment is that the processing is lawful, so long as it is carried out as described in the Notification Form with dialogue and attachments.

SHARE THE NOTIFICATION FORM

It is mandatory for students to share the Notification Form with their supervisor (the project leader). To do this, please tap the "Share project" button in the upper-left corner of the form. Within a week, your supervisor must accept the invitation. In case the invitation expires, you have to repeat the procedure.

TYPE OF DATA AND DURATION

The project will be processing general categories of personal data until the date documented in the Notification form.

LEGAL BASIS

The project will gain consent from data subjects to process their personal data. We find that consent will meet the necessary requirements under art. 4 (1) and 7, in that it will be a freely given, specific, informed and unambiguous statement or action, which will be documented and can be withdrawn.

The legal basis for processing general categories of personal data is therefore consent given by the data subject, cf. the General Data Protection Regulation art. 6.1 a).

PRINCIPLES RELATING TO PROCESSING PERSONAL DATA

We find that the planned processing of personal data will be in accordance with the principles under the General Data Protection Regulation regarding:

lawfulness, fairness and transparency (art. 5.1 a), in that data subjects will receive sufficient information about the processing and will give their consent

purpose limitation (art. 5.1 b), in that personal data will be collected for specified, explicit and legitimate purposes, and will not be processed for new, incompatible purposes

data minimisation (art. 5.1 c), in that only personal data which are adequate, relevant and necessary for the purpose of the project will be processed

storage limitation (art. 5.1 e), in that personal data will not be stored for longer than is necessary to fulfil the project's purpose

THE RIGHTS OF DATA SUBJECTS

As long as the data subjects can be identified in the data material, they will have the following rights: access (art. 15), rectification (art. 16), erasure (art. 17), restriction of processing (art. 18), data portability (art. 20).

We find that the information that will be given to data subjects about the processing of their personal data will meet the legal requirements for form and content, cf. art. 12.1 and art. 13.

We remind you that if a data subject contacts you about their rights, the data controller has a duty to reply within a month.

FOLLOW YOUR INSTITUTION'S GUIDELINES

We presuppose that the project will meet the requirements of accuracy (art. 5.1 d), integrity and confidentiality (art. 5.1 f) and security (art. 32) when processing personal data.

To ensure that these requirements are met you must follow your institution's internal guidelines and/or consult with your institution (i.e. the institution responsible for the project).

NOTIFY CHANGES

If you intend to make changes to the processing of personal data in this project it may be necessary to notify us. This is done by updating the Notification Form. On our website we explain which changes must be notified: <https://www.nsd.no/en/data-protection-services/notification-form-for-personal-data/notify-changes-in-the-notification-form>

Wait until you receive an answer from us before you carry out the changes.

FOLLOW-UP OF THE PROJECT

We will follow up the progress of the project at the planned end date in order to determine whether the processing of personal data has been concluded.

Good luck with the project!

