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FEMALE REMOTE WORKERS' TECHNOSTRESS

- *Finnish female knowledge workers' experiences of daily remote working during the COVID-19 pandemic*

Master's Thesis in Governance of Digitalization
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Abstract for Master's thesis

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<p>Abstract:</p> <p>The COVID-19 pandemic changed the ways of working from working in the office to working remotely from home. Information and Communication Technologies (ICTs) play a crucial role in ensuring the possibility of working remotely. In situations where ICTs or digital solutions are forced on people, it can create stress and anxiety on them, which is called technostress. Remote working conditions during the COVID-19 pandemic have been an ideal environment for technostress. Previous research has found that during the pandemic women have been more likely to suffer from technostress when working remotely than men. This study examines the reasons behind these phenomena and how employees can be helped to cope with technostress.</p> <p>The research was conducted by using qualitative research methods by interviewing eight female knowledge workers from Finland. The results of this study indicate that there are a variety of reasons behind the increased likelihood of technostress in remote working such as organizational attitudes and measures towards remote working, home environment, and personal skills and attitudes. The research results indicate that technostress can be mitigated by various coping mechanisms such as reactive and active measures can be taken. The results of this study also indicate that employees need personal support to prevent and treat technostress. Concrete and practical recommendations are made at the end of the research to help organizations support their employees and to help employees to manage technostress and technostress creators.</p>	
Keywords: Technostress, remote working, remote work, female remote worker, knowledge worker, female knowledge worker, COVID-19	
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TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	OVERALL AIM OF THE THESIS AND RESEARCH QUESTIONS	2
1.2	LIMITATIONS	3
1.3	STRUCTURE OF THE THESIS	4
2	LITERATURE REVIEW	5
2.1	TECHNOSTRESS	5
2.1.1	<i>Concepts and theories in technostress research</i>	8
2.1.1.1	Conceptual model of technostress	8
2.1.1.1.1	Technostress creators	9
2.1.1.1.2	Technostress inhibitors	14
2.1.1.1.3	Job Satisfaction	17
2.1.1.1.4	Organizational and continuance commitment	18
2.1.1.1.5	Individual differences	19
2.1.1.2	Model of coping for technostress	19
2.1.2	<i>Technostress and gender</i>	24
2.1.3	<i>Technostress during COVID-19</i>	28
2.2	REMOTE WORKING	31
2.2.1	<i>Concepts and theories in remote working research</i>	35
2.2.1.1	E-Work Life Scale	35
2.2.1.2	Work-Family border theory	39
2.2.2	<i>Remote working and gender</i>	44
2.2.3	<i>Remote working during COVID-19</i>	46
2.3	TECHNOSTRESS IN REMOTE WORKING	52
3	RESEARCH METHODS	56
3.1	DATA COLLECTION METHODS	56
3.1.1	<i>Preparations for the data collection phase</i>	58
3.1.2	<i>The data collection phase</i>	58
3.1.3	<i>The subjects</i>	59
3.2	DATA ANALYSIS METHODS AND PHASE	60
4	EMPIRICAL FRAMEWORK	62
4.1	REMOTE WORKING EXPERIENCE DURING THE PANDEMIC	62
4.2	REMOTE WORKING ON THE ORGANIZATIONAL LEVEL	65
4.3	DISADVANTAGES OF WORKING REMOTELY	67
4.4	REMOTE WORKING AND DIGITAL TOOLS	69
4.5	RECOVERING AFTER THE REMOTE WORKDAY	70
4.6	CONCLUSIONS	71
5	ANALYSIS AND INTERPRETATION OF RESULTS	72
6	DISCUSSION	77
6.1	REMOTE WORKING CONDITIONS AND SKILLS	77
6.2	REMOTE WORKING EXPERIENCE	78
6.3	IMPACTS OF GENDER ON REMOTE WORKING EXPERIENCE	79
6.4	REMOTE WORKING AND TECHNOSTRESS	80
6.5	COPING AND MITIGATION OF TECHNOSTRESS	81
6.6	KEY FINDINGS AND RECOMMENDATIONS	83
7	CONCLUSIONS	85
7.1	RELIABILITY AND VALIDITY	85
7.2	LIMITATIONS	86
7.3	FUTURE RESEARCH	86
	REFERENCES	88
	APPENDICES	94
	APPENDIX 1 INTERVIEW QUESTIONS	94

TABLE OF FIGURES

FIGURE 01 Conceptual model of technostress (Ragu-Nathan et al., 2008)	09
FIGURE 02 Revised conceptual model of technostress	17
FIGURE 03 Model of proactive and reactive coping for technostress (Pirkkalainen et al., 2019)	20
FIGURE 04 Enhanced conceptual model of technostress	24
FIGURE 05 E-Work Life Scale (Grant et al., 2019)	36
FIGURE 06 Revised E-Work Life Scale (Grant et al., 2019)	39
FIGURE 07 Work-Family border theory (Clark, 2000)	41

1 INTRODUCTION

Since spring 2020, the COVID-19 pandemic has had a major effect on the ways of working. Knowledge workers especially have been forced to learn new ways of working. These new ways of working have meant, in most cases, working separately from their coworkers. During the COVID-19 pandemic, one of the ways to ensure social distancing was to vacate offices and move to working from home (Gabr, Soliman, Allam, & Raouf, 2021; Oksanen, Oksa, Savela, Mantere, Savolainen, & Kaakinen, 2021, p.01; Spagnoli, Molino, Molinaro, Giancaspro, Manuti, & Ghislieri, 2020, p.01). This form of working is called remote working and Information and Communication Technology (ICT) or digital solutions are a vital part of it.

Remote working and ICT solutions have had a crucial role in ensuring business continuity in organizations (Carillo, Cachat-Rosset, Marsan, Saba, & Klarsfeld, 2020, p.69; Gashi, Kutllovci & Zhushi, 2021, p.372). According to Oksanen et al. (2021, p.03), 60% of the Finnish workforce shifted from working in the office to working remotely after the start of the COVID-19 pandemic, which is the highest rate of remote workers in Europe. For the many employees, this was the first time they had to work outside the office as well as the first time they had to rely on digital technologies to work with their coworkers. As the pandemic and the remote working period have lasted for two years it can be said that they have changed the ways of working most likely permanently. Not only have they changed the way of working, but the trend of remote working has also enhanced the crucial role of ICT in work-life (Carillo et al., 2020, p.69). The sudden change in the working environment and new tools in addition to stress related to the global pandemic have been sure stressors for employees.

One of the possible side effects of increased digitalization and remote working is technostress. In their article, Oksanen et al. (2021, p.02) define technostress as stress caused by the use of digital tools and/or demands to use digital tools. According to recent studies (Estrada-Muñoz, Vega-Muñoz, Castillo, Müller-Pérez, & Boada-Grau, 2021, p.10; Gabr et al., 2021; Penado Abilleira, Rodicio-García, Ríos-de Deus, & Mosquera-González, 2021, p.09; Spagnoli et al., 2020, p.06) women have been more prone to suffer

from technostress during the pandemic than men. Previous studies have claimed multiple reasons for this ranging from higher levels of anxiety, more intensive emotional distress, more negative perceptions towards technology, infrequent use of technologies, less confidence with using technologies, and having to multitask between work and household work (Gabr et al., 2021; Spagnoli et al., 2020, p.04).

This thesis studies the current phenomenon of remote working and the effects it has had on female knowledge workers. The phenomenon is studied through technostress. Remote working will most likely continue to be a normal part of knowledge workers' lives in the future, whether daily or mixed in a hybrid model dividing the workweek between the office and remote days. Therefore, it is important to understand how remote working has affected knowledge workers and especially female knowledge workers, who, according to the studies, are more likely to suffer from technostress than their male counterparts. Finding out how knowledge workers (especially females) can be helped to cope with technostress is also important.

1.1 Overall aim of the thesis and research questions

This thesis explores how forced change to daily remote working has affected knowledge workers in Finland and whether they have been suffering from technostress. Previous studies (Estrada-Muñoz et al., 2021, p.10; Gabr et al., 2021; Penado Abilleira et al., 2021, p.09; Spagnoli et al., 2020, p.06) have shown that women have been more likely to suffer from technostress than men during the COVID-19 pandemic. Thus, this research concentrates especially on female knowledge workers.

The overall objective of the thesis is to study the conditions and factors, which lead to technostress in female knowledge workers in remote work. This thesis studies the reasons researchers have previously found to increase technostress on women, compared to men, and it aims to investigate if similar patterns can be found among Finnish female knowledge workers who work remotely. This research hypothesizes that women suffer from technostress more often than men when working remotely due to the household metawork, which often falls on them to be taken care of. Metawork according to Lehtinen (2015), means invisible household work often related to information, such as keeping an

eye on children's hobbies or taking care that children have the right size clothing available. This kind of invisible work, which is required in daily life, often is a woman's responsibility in the family, while less often required metawork, such as mortgage discussions or house repairs, is often a man's responsibility (Lappalainen, 2015). Therefore, metawork increases the daily workload on women and makes them more vulnerable to stress.

For this research, three research questions have been defined to provide answers to the overall objective:

1. Which conditions and factors lead to technostress in female knowledge workers when they work remotely?
2. How do female knowledge workers cope with technostress?
3. Which measures do female knowledge workers take to prevent technostress?

These research questions aim to understand the conditions and reasons in remote work, which lead to stress in female knowledge workers. An additional purpose is to define how technostress is perceived among female knowledge workers and what kind of measures they take to prevent the occurrence of technostress. At the end of this thesis, proposals on what female knowledge workers can do to prevent and ease technostress, and how managers can support them to prevent and treat technostress are included.

The research questions are answered by using qualitative research methods such as interviews as well as a theory-guided content analysis. The data were collected by interviewing female knowledge workers from Finland who had been working remotely full time for at least six months during the COVID-19 pandemic from spring 2020 to autumn 2021. The final number of the interviews was determined during the data collection phase.

1.2 Limitations

Limitations have been made to narrow the studied group and topic. Several limitations have been made to be able to concentrate the study on a specific group and to study their experiences. The study was conducted in Finland.

The group studied was limited to knowledge workers. According to the Cambridge Dictionary (2019), a knowledge worker means “*an employee whose job involves developing and using knowledge rather than producing goods or services*”. The same definition and limitation are used in this thesis to define the target group. Knowledge workers were chosen as knowledge work contains various jobs, which can be performed remotely. The members of this group, hence, have been most likely to work remotely during the COVID-19 pandemic for most of the period.

Additional limitations on the target group were also made according to gender. Women were chosen as a target group for this research. This limitation was made as previous research had indicated that female employees suffer from technostress when working remotely more often than men. However, the reasons behind this phenomenon had been left superficial and additional research was needed. In this study when using the term gender or genders these refer to traditional two genders male and female.

This thesis studies a work-related technostress. Moreover, the study's focus is on work-related digital solutions and tools, and the correlation between these work-related digital tools and technostress. Hence, social media and other digital solutions used in free time and possible technostress caused by these are not part of this study.

1.3 Structure of the thesis

This thesis is comprised of seven chapters. The first chapter introduces the reader to the topic and the aim of this study and describes the limitations and structure of the research. The second chapter provides the theoretical framework on technostress and remote working by presenting the literature found on these subjects and some concepts. The third chapter presents methods used to conduct data collection and data analysis of this research. In the fourth chapter, the empirical framework and data collection results are reviewed. The fifth chapter presents the analysis and the interpretations of the collected data. The discussions are presented in the sixth chapter. The final chapter, the seventh chapter comprises of conclusions of this study, examines the reliability, validity and limitations of this study, and presents reflections on what should be taken into consideration in future research.

2 LITERATURE REVIEW

In this chapter theories and literature related to technostress and remote working are explored. In the technostress chapter, technostress is explained as well as its characteristics such as the symptoms. Often used concepts such as the conceptual model of technostress and the model of coping for technostress are explained and the most relevant literature on technostress and gender and technostress during the COVID-19 pandemic is reviewed. In the remote working chapter, we discuss what is remote working and present its advantages and disadvantages. In these chapters, E-Work Life Scale and work-family borders concepts and theories are explained and reviewed. The most relevant literature about remote working and gender, and remote working during the COVID-19 pandemic are also presented. The final chapter in this part will review the literature about technostress in remote working.

2.1 Technostress

ICTs have undoubtedly had a major positive impact on organizations during the past decades. These digital solutions have helped organizations to grow, cut costs, and created whole new businesses (Tarafdar, Tu, Ragu-Nathan & Ragu-Nathan, 2007, p.302). According to Gabr et al. (2021), ICTs have also increased productivity, creativity, and efficiency in organizations. At the same time, ICTs have made work more obsolete, knowledge-intense, and collaborative (Ragu-Nathan, Tarafdar, Ragu-Nathan, & Tu, 2008, p.418).

While there is no question of the positive impacts of ICTs on organizations, Tarafdar et al. (2007, p.302) indicate that researchers have found ICTs' impact on an individual is not as straightforward. ICTs have had a positive impact on individuals on a job level, for instance, it has made many tasks easier and faster to perform or deleted some laborious tasks altogether (Ragu-Nathan et al., 2008, p.418). However, as the ICTs have changed the organization and employees' tasks it has also disrupted organizational culture and environment in the organizations (Gabr et al., 2021; Ragu-Nathan et al., 2008, p.418). This, according to Gabr et al. (2021), has become one of the main sources of stress to

employees. It has been led to due to the continuous changes to business processes, employees' tasks, and roles (Gabr et al., 2021).

It should be noted that ICTs have not only invaded people's work time but free time as well. Individuals are more connected than ever before, they are also constantly available through smart devices, social media, communication applications, email, the internet, etc. Work can easily follow them to their free time and private life to follow them to their work time. Individuals are also required to have basic ICT skills to be able to cope in society. More and more of the basic services in society are either performed digitally or require the use of digital solutions for individuals to have access to the services. Increased use of ICTs has therefore changed the fundamental nature of interaction in the workplace and private lives (Ragu-Nathan et al., 2008, p.418).

Researchers have found that as individuals have had to adjust to the use of ICTs, and have often been forced to do so, numerous negative side effects have been detected (Ragu-Nathan et al., 2008, p.418; Tarafdar et al., 2007, p.302). In their article, Tarafdar et al. (2007, p.302) mention that these side effects have usually been psychological such as anxiety, a decrease of confidence, feelings of helplessness, and stress. Stress is an individual's cognitive response to their experience of not being able to meet the expectations or demands of their environment (Ragu-Nathan et al., 2008, p.419; Tarafdar et al., 2007, p.304). It can cause a decrease in productivity, lowered job satisfaction and involvement, a decrease in performance, and it may affect an individual's health and quality of life (Gabr et al., 2021; Ragu-Nathan et al., 2008, p.419; Tarafdar et al., 2007, p.304).

In the article by Tarafdar et al. (2007, p.302) it is defined that when ICT, the use of ICTs, or being forced to use ICT causes stress to an individual it means they have difficulties of adjusting or coping with ICT and is, therefore, suffering from technostress. Technostress refers to the stress-creating effects of technologies and is a problem of adaptation (Tarafdar et al., 2007, p.304). The term technostress was first introduced in 1984 by Graig Broad (Ayyagari, Grover, & Purvis, 2011, p.832). The root problem of technostress is the difficulty of adapting to technology and the changing requirements of

digital surroundings. Technostress can cause both physical and psychological symptoms (Gabr et al., 2021).

Technostress can cause a variety of outcomes for individuals and organizations. Some of the outcomes to individuals include dissatisfaction, loss of motivation, fatigue, anxiety, frustration, demoralization, information fatigue, ineffectiveness, overwork, and decrease in productivity (p.51; Ragu-Nathan et al., 2008, p.418; Tarafdar et al., 2007, p.304; Salanova, Llorens & Cifre, 2013, p.02). Technostress can cause a variety of negative psychological experiences. These experiences have been called by Salanova et al. (2013, p.02) as technostrains. Technostrains can manifest in an individual when they are interacting with ICTs as high levels of anxiety, fatigue, skepticism, or inefficacy (Salanova et al., 2013, p.02). Especially those whose job is not ICT intense have been found to suffer significantly more from technostrains than those who have been used to working with the ICTs (Salanova et al., 2013, p.13).

From the organizational standpoint, technostress may result in a decrease in commitment, job satisfaction, and employee outcomes such as productivity. Technostress has also been shown to increased employee turnover, absenteeism, work exhaustion, role conflict and overload, and work-family conflict in organizations. (Atanasoff & Venable, 2017, p.328; Ayyagari et al., 2011, p.832; D'Arcy, Gupta, Tarafdar & Turel, 2014, p.110; Ragu-Nathan et al., 2008, p.417.) These pose a managerial challenge as employee turnover and talent loss can increase the strains caused by technostress on other employees thus creating a vicious cycle. Ayyagari et al. (2011, p.852) suggest as human capital is both important and expensive to the organization, therefore, it should be taken care of and helped by reducing the technostress creators in the organizational environment. It should be also noted that when employees experience health problems, mental or physical, it means there is a risk of prolonged sick leaves, which can become costly to the organization in the long run.

In their articles, both D'Arcy et al. (2014) and Tarafdar, Cooper, & Stich (2019) argue that technostress can also be utilized as a tool to mitigate negative aspects of increased ICT use. Technical innovations such as spam filters and electronic assistants can ease the

harms of technostress (Tarafdar et al., 2019, p.11). D'Arcy et al. (2014, p.114) wrote that technostress can help to steer focus from unproductive IT interactions to more productive ones and help to innovate new ways of dealing with the stressors. Tarafdar et al. (2019, p.12) call this a techno-eustress, which means positive stress. When individual experiences techno-eustress they view the ICTs as an existing new challenge, which they are motivated to overcome and leads to positive outcomes (Tarafdar et al., 2019, p.12).

2.1.1 Concepts and theories in technostress research

In this part, we examine two concepts and theories used in the technostress research conceptual model of technostress and model of coping for technostress. First, we introduce the conceptual model of technostress, which explains factors creating and inhibiting technostress and what it can cause in the organizations. We also introduce the techno-stressors, which complement the conceptual model and examine more closely the situations leading to technostress. Second, we introduce the model of coping for technostress, which examines different kinds of coping mechanisms, behaviors, and skills individuals use to cope with the effects of technostress.

2.1.1.1 Conceptual model of technostress

Ragu-Nathan et al. (2008, p.421) created their conceptual model of technostress to understand technostress its effects, and how it can be alleviated. As presented in Figure 01., this model includes six factors technostress creators, technostress inhibitors, individual differences, job satisfaction, organizational commitment, and continuance commitment (Ragu-Nathan et al., 2008, p.421). Technostress creators are factors, which increase the likelihood of technostress and inhibitors are factors, which reduce the likelihood of it. According to Ragu-Nathan et al. (2008, p.421), technostress creators have a negative effect on an individual's sense of job satisfaction. Technostress inhibitors, however, have a positive effect on job satisfaction as well as organizational commitment and continuance commitment. Thereafter, job satisfaction has a positive effect on organizational commitment, which in turn has a positive effect on continuance commitment.

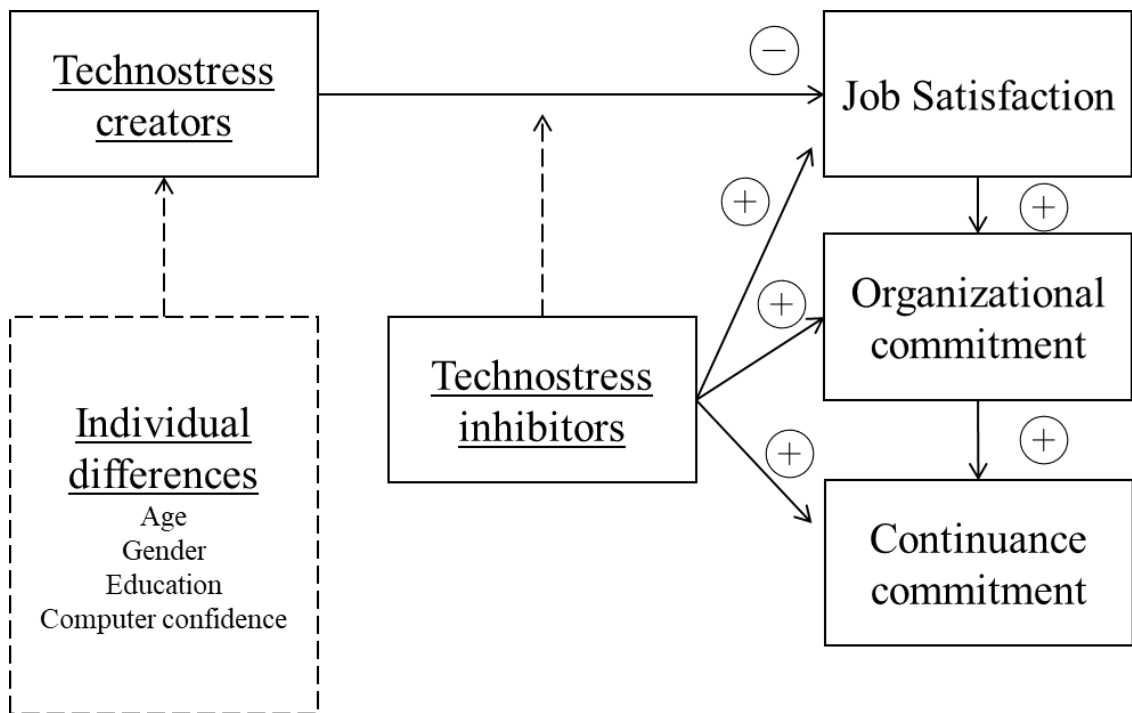


Figure 01. Conceptual model of technostress (Ragu-Nathan et al., 2008)

2.1.1.1.1 Technostress creators

Multiple reasons exist why ICTs create stress on individuals. ICTs are complex technologies, which tend to evolve continuously making it difficult to keep up (Ragu-Nathan et al., 2008, p.422). As pointed out by Ragu-Nathan et al. (2008, p.422), though technologies have made some tasks obsolete or easier to handle it has created new problems, which require more work from employees and have increased multitasking. Therefore, technostress creators in the organizations are ICT-related stress creators or situations, which emerge in the individual's working environment (Pirkkalainen, Salo, Tarafdar & Makkonen, 2019, p.1181). In the articles by Ragu-Nathan et al. (2008, pp.421-422) and Tarafdar et al. (2007, pp.304 -306), they have identified five situations and factors in organizations as technostress creators: continual connectivity, various channels of information inputs, the pressure of keeping up with the evolving technology, the complexity of technologies, and multitasking.

According to Ragu-Nathan et al. (2008, p.421), continual connectivity stems from technology allowing people to be reached anywhere at any time. This can lead to feelings of being on call constantly and increasing the inability to separate work and private lives

(Ragu-Nathan et al., 2008, p.421; Tarafdar et al. (2007, pp.304-305). However, it is more complicated than that. Not only are people more available than before there are also various channels of communication making it demanding to keep up with it all. These various channels not only make communication more demanding but also provide various forms of information. Individuals are exposed to enormous amounts of information from multiply channels and trying to keep up or use it all is simply impossible (Ragu-Nathan et al., 2008, p.421). When information is available employees are expected to keep up with it, which can create pressure, decrease performance, increase stress and cause information fatigue (Ragu-Nathan et al., 2008, p.421; Tarafdar et al., 2007, p.306).

While ICT is constantly evolving so are the demands for employees' skills of using the latest technologies. As organizations are regularly updating or changing their systems it is, therefore, a rule not an expectation in today's working life. This phenomenon can, according to Ragu-Nathan et al. (2008, p.422) and Tarafdar et al. (2007, p.305), create pressure, anxiety, fear, and stress for employees to try to keep up with the evolving technology. Employees' knowledge of ICT can quickly become obsolete if not maintained regularly, which can create uncertainty amongst the employees (Ragu-Nathan et al., 2008, p.422). If an employee cannot keep up with the demands, it can create fear of not meeting the organization's expectations and being replaced by a more capable employee. Though employees would initially be excited about new technologies, the constant changes and the need for learning and developing skills as well as fear of not keeping up can create frustration and stress in employees (Ragu-Nathan et al., 2008, p.422; Tarafdar et al., 2007, p.305).

ICT solutions are not anymore just for the technical department. However, this does not mean that complexity of these technologies or the technical environments has significantly decreased due to this shift. The variety of applications used in organizations has increased and ICT-related terminology has become part of daily conversations. Employees with non-technical backgrounds have had to come in custom with both complex technical capabilities and terminology (Tarafdar et al., 2007, pp.305-306). As the ready-made software often, does not fit the existing business processes company-specific customizations are required (Ragu-Nathan et al., 2008, p.422). According to

Ragu-Nathan et al. (2008, p.422), this often leads to an even more complex technical environment where problems occur more often. This makes employees' work and adjustment to ICTs even more difficult and on top of all the problems, the documentation might not include all the customizations so the employee has to rely on technical personnel to help with even the most minor tasks (Ragu-Nathan et al., 2008, p.422). Employees have found the complexity of technologies intimidating and it has made them feel unsatisfied and unable to cope with everyday tasks (Ragu-Nathan et al., 2008 p.422; Tarafdar et al., 2007, pp.305-306).

ICT solutions allow employees to multitask, meaning to work at many different tasks simultaneously. To a certain point, multitasking can be an effective way of working and increase the productivity of the employee (Tarafdar et al., 2007, p.306). However, according to Ragu-Nathan et al. (2008, p.422) and Tarafdar et al. (2007, p.306), ICT can blur and push the limits of multitasking. When multitasking is prolonged, it can become an inefficient way of working when an employee is unable to finish their tasks while more tasks are constantly streaming in. Prolonged multitasking can lead to stress, exhaustion, burnout, increased tension, loss of feeling in control, decrease job satisfaction, and lowered productivity (Ragu-Nathan et al., 2008, p.422; Tarafdar et al. (2007, p.306).

After researching on situations and factors, which create technostress Ragu-Nathan et al. (2008, pp.425-427) and Tarafdar et al. (2007, pp.313-315) identified five technostress creators, which they named "techno-overload", "techno-invasion", "techno-complexity", "techno-insecurity" and "techno-uncertainty". These have often been called technostressors in the literature (Tarafdar et al., 2019). Stressors are factors in an individual's environment such as events or demands, which create stress on the individual (Ragu-Nathan et al., 2008, p.419).

Techno-overload refers to a situation where ICTs are forcing employees to work faster and longer (Ragu-Nathan et al., 2008, p.427; Tarafdar et al., 2007, p.315). Similarities can be found from previously described technostress creators such as "multitasking" and "various channels of information inputs". As technology makes it possible for an employee to be bombarded with multiply sources of information and requests interrupting flows and making it difficult to focus on current activities (Tarafdar, Tu, Ragu-Nathan,

& Ragu-Nathan, 2011, p.116). These flows of messages can create pressure of having to respond to everything as it arrives, which, according to Tarafdar et al. (2011, p.116), in return can lead to anxiety and concentration problems. According to Ragu-Nathan et al. (2008, p.430), it is a similar situation as role overload as both describe a situation where an employee is subject to increased demands, which create stress. Tarafdar et al. (2011, p.117) describe that in its essence techno-overload describes the situation of too much of everything. Techno-overload can create a situation where information is not processed correctly or where employees do not have time to use their brains to find innovative solutions (Tarafdar et al., 2011, p.118).

Techno-invasion describes the invasive nature of the ICTs, which allow employees to be available at any time and place and the feelings of pressure on the employees' side to do so (Ragu-Nathan et al., 2008, p.427; Tarafdar et al., 2007, p.315). A similar situation was previously described as technostress creator "the continual connectivity". According to the articles by Ragu-Nathan et al. (2008, p.427) and Tarafdar et al. (2007, p.315), techno-invasion can blur the borders between work and private lives as the work can follow to the free time. At the same time, while these technologies create stress, they can be very addictive as well. Resulting in employees being bound to these technologies in all areas of their lives and being left feeling stressed and frustrated (Tarafdar et al., 2011, p.116). According to Tarafdar et al. (2011, p.117), techno-invasion is best described as always connected never free of technologies.

Techno-complexity is a situation where the difficulty to understand complex ICTs makes an employee feel like they are lacking the demanded skills and forces them to spend time and effort to meet the demands (Ragu-Nathan et al., 2008, p.427; Tarafdar et al., 2007, p.315). Previously described technostress creator "the complexity of technologies" is similar to this. Organizations are under continuous pressure from competitors and vendors to have the latest software and updates (Tarafdar et al., 2011, p.117). Updates and new versions usually mean changes and therefore employees are in a continuous learning curve, making it difficult for them to keep ahead of the game or even at the required standard. According to Ragu-Nathan et al. (2008, p.430), the situation during this techno-stressor is similar to a task complexity as both refer to a situation where it is

difficult for an employee to understand the conditions they have to work in and they are required to spend a lot of time to catch up. Tarafdar et al. (2011, p.117) describe techno-complexity simply as difficult to keep up or to understand. According to Tarafdar et al. (2011, p.118), techno-complexity can create a situation where the inability to understand the complexities of the technologies blocks them from finding new ways of performing tasks or innovating. Techno-complexity also hinders productivity when employees have to spend most of their time trying to understand what they are doing and increases the likelihood of mistakes (Tarafdar et al., 2011, p.118).

Techno-insecurity describes a situation where an employee feels like ICTs or another employee with better ICT skills will replace them (Ragu-Nathan et al., 2008, p.427; Tarafdar et al., 2007, p.315). Similarities can be found with previously defined technostress creators “the pressure of keeping up with the evolving technology”. As younger generations, who have grown up with technologies available, are emerging into the workforce the situation may feel threatening to older employees. These new employees may have more enthusiastic attitudes toward changes and have a shorter learning curve with the new technologies, which may make older employees feel insecure and cynical creating stress and tension in the workplace (Tarafdar et al., 2011, p.117). Evolving technologies as well can create insecurities in the employees. As the ICTs are constantly evolving employees may start to feel like at some point their position and their jobs in the organization become redundant. Simply, techno-insecurity is about technologies and the current working environment making employees uncomfortable (Tarafdar et al., 2011, p.117).

Techno-uncertainty describes the unsettling feelings on employees due to the continuous changes in ICTs and having to keep up with it all (Ragu-Nathan et al., 2008, p.427; Tarafdar et al., 2007, p.315). Similarities can be found with this techno-stressor and with the previously described technostress creator “the pressure of keeping up with the evolving technology”. Even the most enthusiastic employees may start at some point to feel frustrated and anxious when their skills become obsolete quickly and they feel like what they do or learn is never enough (Tarafdar et al., 2011, p.117). According to Ragu-Nathan et al. (2008, p.430), it is similar to role ambiguity as both refer to a situation where

an employee is uncertain of the expectations towards them, which leads to feelings of stress. Tarafdar et al. (2011, p.117) described techno-uncertainty as changes coming too often and technologies are too unfamiliar to employees. Techno-uncertainty may result in lowered productivity when employees are uncertain of making decisions in an ICT environment and require support and reassurance from others (Tarafdar et al., 2011, p.118).

2.1.1.1.2 Technostress inhibitors

As previously defined technostress inhibitors are factors, which alleviate the likelihood of technostress. Inhibitors are usually organizations' mechanisms or measures, which can potentially reduce technostress on its employees (Ragu-Nathan et al., 2008, p.422). Organizations can use many ways to help their employees to cope with the ICTs. Ragu-Nathan et al., (2008, pp.422-423) mention in their article, for example, training, availability of technical support, involving employees in IT projects, and frequent communication.

Training especially is one of the most effective tools to decrease the likelihood of technostress. According to Ragu-Nathan et al. (2008, p.422), employees who have had more training or whose training was considered high quality are more likely to have a positive response to new ICT solutions than their counterparts with less training or with poor quality training. Training can make employees better equipped and prepared for upcoming changes and reduce the likelihood of future mistakes (Tarafdar et al., 2011, p.118).

Availability of technical support is also important for employees to be able to create a good relationship with the ICTs. Ragu-Nathan et al. (2008, p.422) suggest that technical support should be available to the employees to help with their problems, and employees should early on be encouraged to learn the software by exploring its functionalities. When technical support is easily accessible and responsive it can increase job productivity and job satisfaction (Tarafdar et al., 2011, p.118).

Training and support together create an important mechanism for the organizations to guide their employees through the change and reduce negative emotions related to it. In their study, Ragu-Nathan et al. (2008, p.427), named these technostress inhibitors “*literacy facilitation*” and “*technical support provision*”. Literacy facilitation refers here to a wider context than just training it refers to overall encouragement of ICT-related knowledge sharing in the organization.

Involvement is a great way to reinforce employees' relationships with the ICTs. Other than technical employees, or as often referred to the end-users, should be involved in IT projects already the very start (Ragu-Nathan et al., 2008, p.422). When end-users are involved in the early phases of the IT project and can have an impact, according to Ragu-Nathan et al. (2008, p.423) and Tarafdar et al. (2011 p.119), they create stronger relationships with the new technologies and are thus less likely to feel anxiety or stress when using it. Tarafdar et al. (2011, p.119) also indicate that when employees outside IT are involved, they will more likely bring up new ideas and points of view increasing the usefulness of the new systems.

Another way to involve employees is to communicate with them. Organizations should understand that it is important to openly communicate with their employees about the coming changes, what kinds of effects does it have, and what kinds of benefits and opportunities these present to the employees (Ragu-Nathan et al., 2008, p.423). As it is said there can never be too much communication. Ragu-Nathan et al. (2008, p.423) mention that communication can help employees to reduce stress, fear, and anxiety related to changes. In their study, Ragu-Nathan et al. (2008, p.427), combined these two mechanisms, involvement, and communication, as one technostress inhibitor “*involvement facilitation*”.

Additional technostress inhibitors have also been identified. Tarafdar et al. (2011, p.119) identified “*innovation support*”, which refers to an organizational culture of encouraging experimenting and learning. Encouraging employees to innovate with the technologies can help them understand technologies better and make them less threatening to them (Tarafdar et al., 2011, p.119). This kind of organizational environment allows new ideas,

risk-taking, making mistakes, and learning from them, alleviating further the possible stress and fears caused by the ICTs.

In their article Tarafdar et al. (2019, p.25) present that ICT design could be used to tackle technostress. When technologies have been designed so that they are user-friendly and easy to use they can feel less threatening to the users and minimize techno-complexity (Tarafdar et al., 2019, pp.25-26). Design features that create positive feelings, enhance continual use, and strengthen the employee's feeling of gaining benefits from using the technologies inhibit technostress (Tarafdar et al., 2019, p.27). It should be noted that design aspects should also take into consideration different kinds of users and consider their differences and needs. Tarafdar et al. (2019, p.27) argue, that better-designed technology can therefore increase employees' skills and abilities, which in turn will increase innovation and performance in the organizations.

Ioannou, Lycett, & Marshan, (2022) present in their study an additional technostress inhibitor, which has rarely been taken into consideration previously, that is mindfulness and IT mindfulness. Mindfulness means being present at the moment and being aware of the occurring situation (Ioannou et al. 2022). IT mindfulness, on the other hand, is defined in Ioannou et al.'s (2022) article as mindfulness, which occurs when an individual is working with IT. This type of mindfulness has four dimensions understanding IT, identifying the usefulness of IT, enthusiasm towards IT, and the ability to focus on the present task (Ioannou et al., 2022). In their research, Ioannou et al. (2022) found that IT mindfulness helped mitigate the negative effects of technostress and increased job satisfaction and productivity. They (Ioannou et al., 2022) suggest that organizations should consider offering IT mindfulness education to their employees and include it as part of their organizational culture to help mitigate the negative effects of technostress.

After reviewing both the five techno-stressors and the six identified techno inhibitors the conceptual model of technostress has been revised to include these main stressors and inhibitors. Figure 02. presents the revised version of the conceptual model with these inclusions.

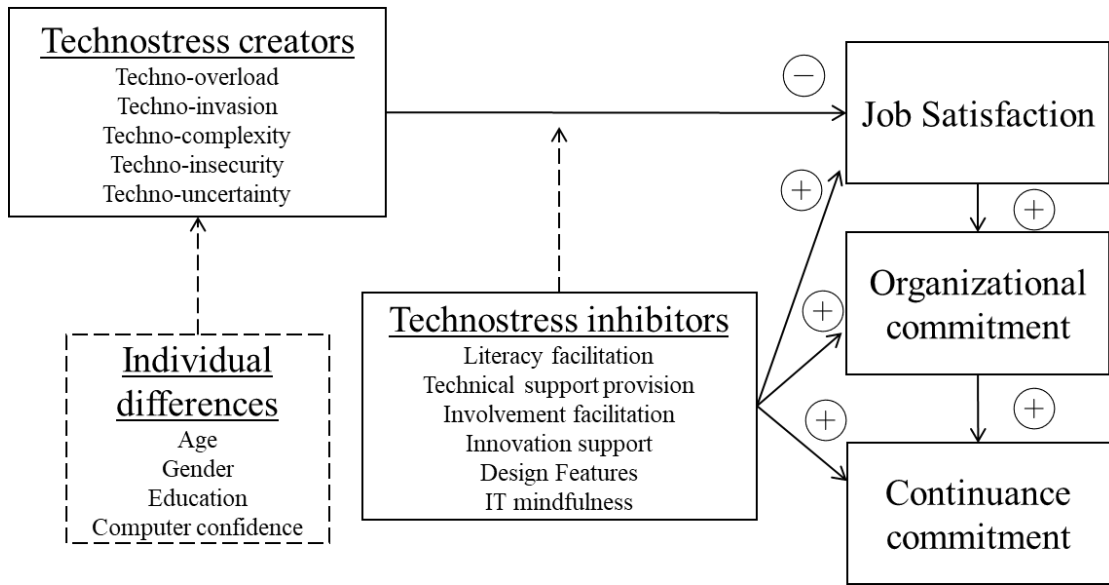


Figure 02. *Revised conceptual model of technostress*

2.1.1.1.3 Job Satisfaction

Job satisfaction is a positive emotion towards one's job resulting from the individual's experiences in the job (Ragu-Nathan et al., 2008, p.423). The conceptual model includes this, according to Ragu-Nathan et al. (2008, p.423), because it has been determined to be affected by workplace-related stress, it is a vital part of stress studies and because it is often used as an indicator of the success of ICT projects in the organizations. Therefore, it is important to measure job satisfaction with technostress.

Technostress creators are likely to decrease job satisfaction, whereas technostress inhibitors are likely to increase it (Ragu-Nathan et al., 2008, p.423). Technostress creators may increase negative feelings towards work affecting job satisfaction. According to Tarafdar et al. (2011, p.117), technostress creators in the employee's work environment can increase role overload and role conflict, which eventually negatively affect job satisfaction. Role overload is a situation where an employee feels like there is too much work or the work required in their role is too difficult (Tarafdar et al., 2011, p.117). Whereas role conflict means the feelings of inconsistencies, these inconsistencies may be about work extending to free time, changes in processes to what was familiar, or new required skills may conflict with their existing ones (Tarafdar et al., 2011, pp.117-118).

Ragu-Nathan et al. (2008, p.423) wrote that technostress inhibitors can alleviate the effects of technostress creators on job satisfaction. Technostress inhibitors such as providing training, supporting, involving employees, communicating with the employees, and culture of innovation in the organization have been known to alleviate change-related stress on employees, and therefore increase job satisfaction (Ragu-Nathan et al., 2008, p.423; Tarafdar et al., pp.118-119).

2.1.1.1.4 Organizational and continuance commitment

Organization commitment and continuance commitment measure how involved an employee is to the organization and how likely they are to stay in the organization (Ragu-Nathan et al., 2008, p.423). These have been added to the conceptual model to inspect the broader effects technostress has on the organizations in the long term (Ragu-Nathan et al., 2008, p.423).

According to Ragu-Nathan et al. (2008, p.423), organizational commitment is defined as the strength, in which an employee can connect to the organization through its beliefs, goals, and values. It has been found that the more satisfied an employee is in their job the more committed they are to their organization (Ragu-Nathan et al., 2008, p.424). Technostress creators, according to Tarafdar et al. (2011, p.118), are associated with reduced organizational commitment as these make working in the organization uncomfortable for the employees and make it harder for them to identify with the organization's goals and values. However, it is argued by Ragu-Nathan et al. (2008, p.424), that technostress inhibitors have a positive impact on organizational commitment.

Continuance commitment on the other hand refers to the likelihood of an employee staying in the organization. Continuance commitment is about how beneficial an employee views staying in the organization or leaving the organization. Organizational commitment has a positive impact on continuance commitment, hence the more committed an employee is to the organization and its values the more likely they will continue working there. It has also been argued that technostress inhibitors have a positive impact on organizational commitment. (Ragu-Nathan et al., 2008, p.424.)

2.1.1.1.5 Individual differences

Individual differences in the conceptual model of technostress present four kinds of characteristics education, age, gender, and computer confidence. These four individual differences can have both positive and negative effects on the likelihood of technostress. According to Ragu-Nathan et al. (2008, p.424), education especially has been a positive influence in preventing strains of technostress. They (Ragu-Nathan et al., 2008, p.424) argue that the more education an individual has the faster they become accustomed to the new ICTs and less negative feelings do they express towards the ICTs. Age, however, can work either to alleviate or increase technostress. These characteristics have more to do with other individual factors. For example, more educated older professionals might be more able to handle technostress than their younger less-educated counterparts. The effects of gender on technostress will be discussed in a later chapter.

Computer confidence has been seen as one of the main alleviating factors for technostress by reducing negative emotional exhaustion (Ragu-Nathan et al., 2008, p.424; Tarafdar et al., 2011, p.119; Ma, Ollier-Malaterre & Lu, 2021, p.07). Ragu-Nathan et al. (2008, p.424) present in their article, that computer confidence increases an individual's ability to use ICTs independently and independence lowers anxiety, fear, and stress related to the ICTs. The same characteristic has also been presented as self-efficacy (Ma et al., 2021, p.01; Ragu-Nathan et al., 2008, p.424). Computer confidence or self-efficacy can increase an employee's trust in their skills and ability to handle new issues with ICTs, hence they experience less technostress (Tarafdar et al., 2011, p.119). According to Ma et al. (2021, p.03), those employees with high self-efficacy phase fewer negative emotions when confronting techno-stressors than their counterparts with low self-efficacy. Ma et al. (2021, p.03) argue that those individuals with lower self-efficacy have to spend more time coping with techno-stressors. Computer confidence can be increased through training and encouragement to experiment with the ICTs.

2.1.1.2 Model of coping for technostress

In their article, Tarafdar, Pirkkalainen, Salo, & Makkonen (2020, p.83) bring up that employees have started increasingly to create their own coping mechanisms to decrease

the effects of technostress. Coping means cognitive and emotional behavior, which an individual undertakes when they encounter stress-creating situations (Pirkkalainen et al., 2019, p.1180). In their article, Pirkkalainen et al. (2019) created a technostress coping model called “a model of proactive and reactive coping for technostress”. It introduces coping mechanisms and behaviors, which help an employee to mitigate the risks of technostress and what kinds of combinations of these mechanisms and behaviors are the most useful. Their model is presented in Figure 03. In their model, Pirkkalainen et al. (2019) argue that technostress creators, or techno-stressors, hurt IT-enabled productivity, which proactive and reactive coping mechanisms can mitigate. According to Pirkkalainen et al. (2019, p.1185), techno-stressors inhibit an employee’s resources from performing IT-enabled tasks effectively compared to the prior situation and hence decrease their productivity.

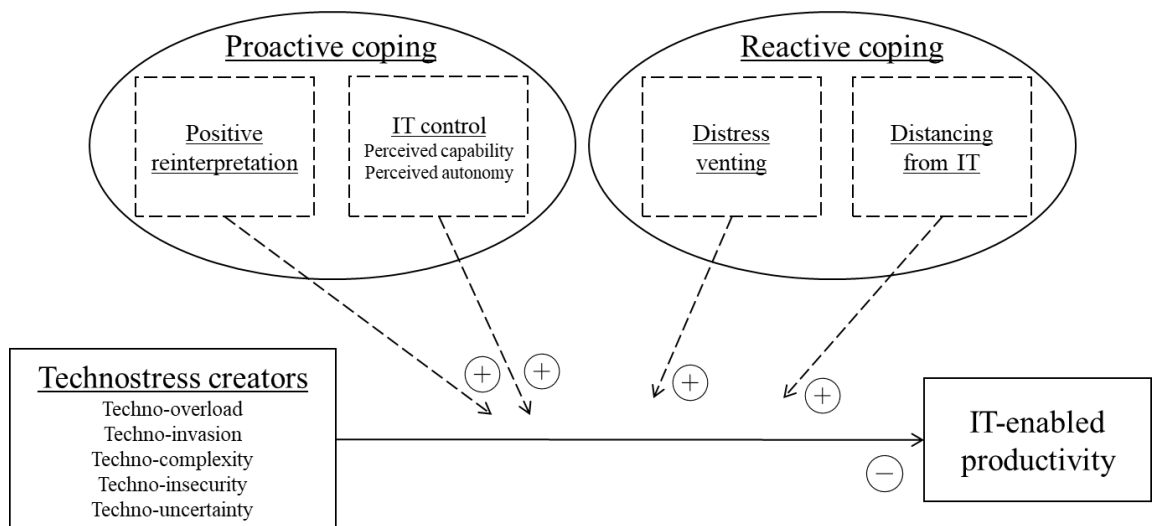


Figure 03. Model of proactive and reactive coping for technostress (Pirkkalainen et al., 2019)

Coping mechanisms provide employees with skills to adapt to changes and how to respond to them. According to Tarafdar et al. (2020, p.83), coping mechanisms can help to alleviate the negative outcomes of technostress. Pirkkalainen et al. (2019, p.1183) argue that technostress is an inevitable situation in the working life, which employees need to prepare for and need to learn to cope with so they can mitigate the negative effects. When a stressful situation occurs there are two ways, in which employees can react to it either by using emotions or by using actions (Tarafdar et al., 2020, p.83). Pirkkalainen et

al. (2019, p.1182) claim that when an employee sees ICT as a threat, which they cannot avoid they tend to rely on emotions rather than actions. According to Pirkkalainen et al. (2019, p.1182), Combining emotion-based coping mechanisms with action-based coping mechanisms is usual for employees. For example, when emotion like frustration or anger is experienced due to a difficult task it might trigger an employee to seek help from their coworkers to tackle the task. In their model, Pirkkalainen et al. (2019) used the terms reactive and proactive to present these two types of coping behaviors.

Reactive coping is defined by Pirkkalainen et al. (2019, p.1180) as behavioral responses to stressors and stressful situations. These could also be called emotion-based coping mechanisms. As stressful situations might occur without a warning it is common for individuals to use reactive coping mechanisms. It describes the individual's spontaneous first response to the stressful situation and is usually unavoidable. According to Pirkkalainen et al. (2019, p.1184), reactive coping behaviors are used to minimize the burden triggered by the stressors. These kinds of reactive coping mechanisms are, for example, showing emotions, seeking help, and distancing from the situation (Pirkkalainen et al., 2019, pp.1184-1185). In their model, Pirkkalainen et al. (2019, p.1187) chose "*distress venting*" and "*distance from IT*" as the most effective reactive coping mechanisms.

Distress venting refers to verbally expressing one's emotions and it has been shown to ease the frustration, tension, and stress when an individual can openly express their feelings (Pirkkalainen et al. 2019, p.1187). Tarafdar et al. (2020, p.86) claim that venting helps employees to mitigate the negative effects of technostress on their productivity and be less affected by stress. Distance from IT means to remove oneself from a stress-creating situation or environment when feeling anxious creating brief relief from the situation (Pirkkalainen et al., 2019, p.1187; Tarafdar et al., 2020, p.86). According to Pirkkalainen et al. (2019, p.1187), distancing can help an employee to move their focus from the stressor to more meaningful aspects like their work or how to deal with the stressor in the future. Studies, such as Pirkkalainen et al. (2019, p.1181), show that reactive coping behaviors are most effective when combined with proactive coping behaviors and mechanisms. In fact, according to Pirkkalainen et al. (2019, p.1185),

reactive coping mechanisms alone have been associated with poor results in stress management.

According to Pirkkalainen et al. (2019, p.1180) proactive coping means preventative measures, which to deal with stressful situations and to use these situations as learning and personal growth opportunities. Proactive coping mechanisms could also be called action-based or problem-based coping mechanisms. These mechanisms are created proactively when a potentially stressful situation is on the horizon (Pirkkalainen et al., 2019, p.1184). Proactive coping includes two different kinds of behaviors identified by Pirkkalainen et al. (2019, p.1184), which they use in their model: “*positive reinterpretation*” and “*IT control*”.

Positive reinterpretation means discharging stressful situations through positive feelings and seeking positive aspects from the situation (Pirkkalainen et al., 2019, p.1188). When an employee has a positive attitude towards the ICTs or changes in general it can help them to handle these stress creators better (Tarafdar et al., 2020, p.86). IT control coping mechanism on the other hand is described by Pirkkalainen et al. (2019, p.1189) as an individual's impression of their skills and abilities or control over technostress-stressors. IT control has two main aspects perceived capabilities and perceived autonomy. Perceived capabilities refer to the perception of skills and abilities and perceived autonomy refers to independence and control over the situation. Pirkkalainen et al. (2019, p.1189) argue that the more capable the employee feels they are and more in control of the situation they feel they are, the better they will react to the stressful situation.

According to Pirkkalainen et al. (2019, p.1185), proactive coping behaviors affect what kind of reactive coping behaviors are used by the individual. Proactive coping mechanisms have been seen to enhance the positive effects of reactive coping (Pirkkalainen et al., 2019, p.1180). For example, when an individual has a perception of autonomy over the stress creator, they are more likely to have control over the emotions they express when the stress occurs. Proactive and reactive mechanisms can and should be combined to better handle stressful situations (Pirkkalainen et al., 2019, p.1185). More proactive coping mechanisms an employee has the better equipped they are to the

stressors and the more useful reactive coping mechanisms they will use in the situation (Pirkkalainen et al., 2019, pp.1207).

Pirkkalainen et al. (2019, p.1208) suggest that organizations should actively support their employees to learn more proactive coping skills and create awareness for techno-stressors and how to identify them. It should be noted that there is no one right way of coping and different kinds of combinations of coping behaviors can be more beneficial for one group of employees but not for another. Therefore, according to Pirkkalainen et al. (2019, p.1208), it is beneficial to educate the employees about possible coping mechanisms. Managers should also support their employees to find the most suitable coping mechanisms for them depending on their role and characteristics (Tarafdar et al., 2020, p.87). Tarafdar et al. (2020, p.88) also suggest that organizations should have flexible IT policies, such as the possibility to create their own working processes, which allow employees to adapt their coping mechanisms to be most suitable and effective.

When considering the technostress coping model similarities can be found between it and the conceptual model of technostress. For this reason, the following Figure 04. was created to demonstrate the technostress and all of the factors, which can mitigate its effects. Here we take into consideration that technostress creators have a negative effect on both IT-enabled productivity and job satisfaction as productivity along the job satisfaction are important measures of changes to the organizations. As found by Ioannou et al. (2022) techno inhibitors can have a favorable effect on productivity this notion has also been added to the enhanced conceptual model of technostress.

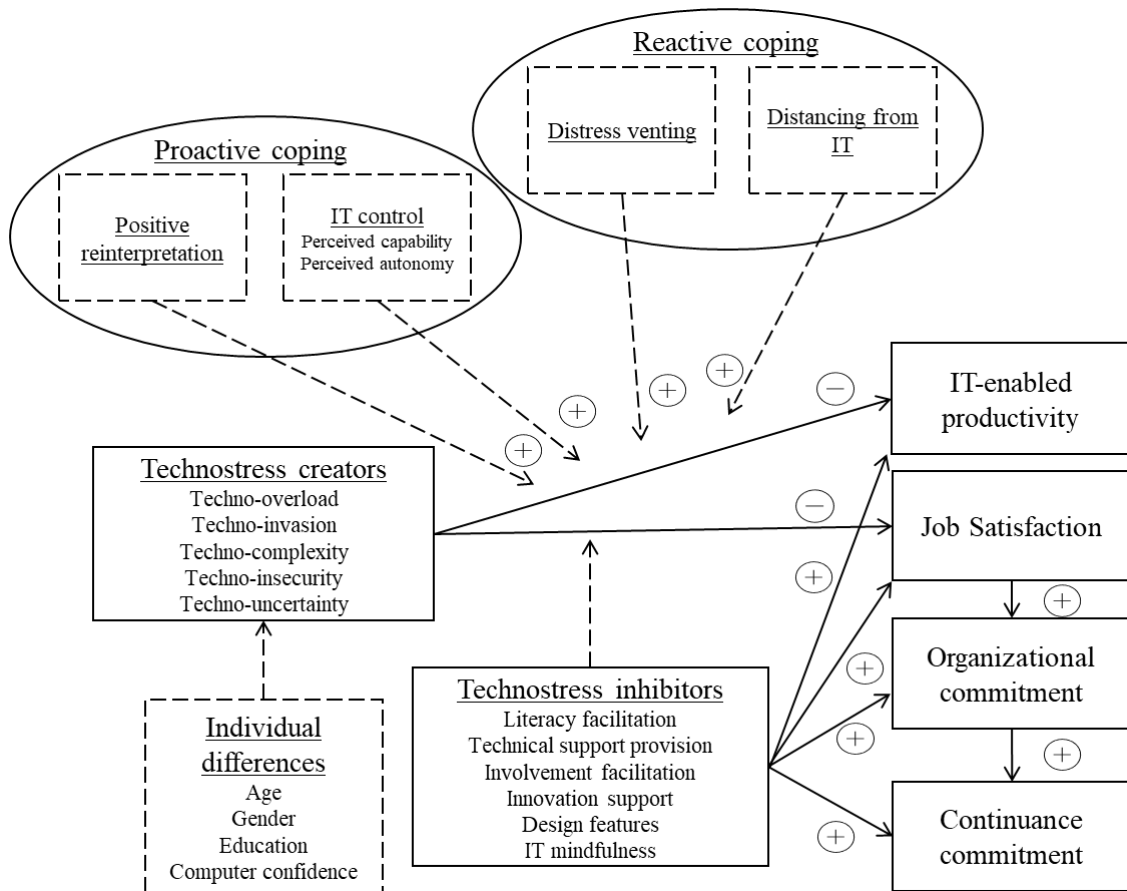


Figure 04. *Enhanced conceptual model of technostress*

2.1.2 Technostress and gender

Literature on technostress seems to have varying opinions on, which gender is more prone to suffer from technostress. Marchiori, Mainardes, & Rodrigues (2018, p.11) found that several pieces of literature reports men being more prone to technostress than women, whereas others reported contrary results and some even reported that gender did not play any role. Ragu-Nathan et al. (2008, p.424) for example argued that women are more prone to suffer from technostress than men but their results contradicted their belief. They believe that in their results this was because the majority of their subjects were men and because the women in their study had more experience in working and therefore were more capable of handling the possible techno-stressors (Ragu-Nathan et al., 2008, p.429). Marchiori et al. (2018, p.09) argue that the issue might be more complex than that and that different genders are more prone to different aspects of technostress than others. It should also be taken into consideration that many of the studies have been performed on

different occupations, hence it could explain the variation in the research outcomes as occupations, education, and skill levels could affect the results.

In the technostress literature, women are viewed as having passive attitudes towards technologies. Ragu-Nathan et al. (2008, p.424), for example, argue in their study that the decision to use or not to use ICTs by women is based on how they believe they are expected to decide in the organizations whereas by men it is based on their attitudes towards the technology. According to Carlotto (2011, p.60), women are more likely to view technologies as a threat, which they do not control. Furthermore, it is claimed that women are less likely to use ICTs, have less confidence in using the ICTs, and are more prone to have anxiety and fear towards them (Gabr et al., 2021; Ragu-Nathan et al., 2008, p.424; Spagnoli et al., 2020, p.04). However, Carlotto (2011, p.58) argues that this could be due to how differently men and women have been encouraged to use technologies and how working with technologies has been viewed to be a masculine field. Interestingly even though most research shows that women are less confident with technologies, Pirkkalainen et al. (2011, p.1205) found in their study that when women use the ICTs, they use them more productively than their male counterparts.

According to Carlotto (2011, p.54), women suffer from work-related stress more often than men. They (Carlotto, 2011, p.54), also argue that women are more prone to use reactive coping mechanisms whereas men are more likely to use proactive coping mechanisms to alleviate stress. As previously reviewed reactive coping mechanisms alone have a poor effect on alleviating stress. According to Carlotto (2011, p.60), men's coping mechanisms to technostress were more problem-oriented, which included planning and being more active towards the stressor. However, women relied on emotional coping mechanisms such as support from other people, denial, and distance from the situation (Carlotto, 2011, p.60). In their article, La Torre, De Leonardis, & Chiappetta, (2020, p.63) wrote that when suffering from technostress the consequences of it on men are more often related to social issues such as isolation. This would indicate that social coping mechanisms are in some terms beneficial as they protect from such consequences.

These differences in technostress coping mechanisms between the genders are explained by Carlotto (2011, p.60) through how genders view the technologies. As women are more likely to view then ICTs as something they cannot control, when a problem occurs, they rely on emotional mechanisms as they do not believe they can handle the problem any other way (Carlotto, 2011, p.60). This is a problem, which could be tackled by increasing ICT-related training and computer confidence in women.

Recent studies done during the COVID-19 pandemic have shown that women are more prone to suffer from technostress than men (Estrada-Muñoz et al., 2021, p.10; Gabr et al., 2021; Penado Abilleira et al., 2021, p.09; Spagnoli et al., 2020, p.06) Spagnoli et al. (2020, p.06). explain this by men being more involved with technologies and thus having higher computer confidence than women. Gabr et al. (2021) suggest that higher levels of technostress on women could be due to a higher amount of domestic responsibilities creating more work-family conflict on women than on men. Penado Abilleira et al. (2021, p.06) indicate that though women were more likely to suffer from technostress it did not show in their job performance, hence there was no difference in job performance levels between the genders in their study.

When viewing this aspect from a techno-stressor point of view it has been pointed out that women are more likely to experience techno-complexity and techno-uncertainty whereas men experience techno-overload and techno-invasion more often (Marchiori et al., 2018, pp.09-10; Spagnoli et al., 2020, p.07). These results seem to support what has been previously suggested about women feeling more insecure with technologies whereas men are maybe even too involved with technologies. Marchiori et al. (2018, p.3) wrote that men are more oriented towards external aspects of technologies for example utility of the technologies whereas women tend to be more oriented toward internal aspects such as ease of use. This point of view supports the differences in experiences with techno-stressors. When considering the techno-stressors aspects techno-overload and techno-invasion are external stressors while techno-complexity and techno-uncertainty are internal stressors (Marchiori et al., 2018, pp.09-10). This view is further supported by Atanasoff & Venable's (2017, p.329) claim that men's stress is more achievement or accomplishment based whereas women's is more interpersonal based.

Contrary to previous findings, La Torre et al. (2020, p.63) found in their study that women experienced techno-overload and techno-invasion more often than men. Their (La Torre et al., 2020, p.63) findings however support previous findings on women experiencing more techno-complexity than men. It should be noted that La Torre's findings have been made during the COVID-19 pandemic, thus the increased experience of techno-overload and techno-invasion by women could correlate with Gabr et al.'s (2021) claim that women have more domestic responsibilities and experience more work-family conflict.

In their study, Carlotto (2011, p.57) found that women are more prone to suffering from technostress, especially anxiety, skepticism, and inefficiency when they encounter technostress. Similar findings have been made in other studies as well. Other studies have expressed women feeling more anxiety towards technologies, but contrary to the study by Carlotto, they also expressed women suffering from technology-related fatigue more often than men (Estrada-Muñoz et al., 2021, p.09; Gabr et al., 2021). As the contradicting studies have been conducted during the COVID-19 pandemic these could further support Gabr et al.'s (2021) claim about the higher rates of domestic responsibilities and work-family conflict on women than men, increasing their workload and feelings of not enough time. In the article by Gabr et al., (2021) higher levels of anxiety in women is explained by men using technologies more, making their computer confidence higher than women's.

Though the results of the literature review on technostress and gender differences are mixed. The results seem to indicate that the special circumstances that the COVID-19 pandemic and daily remote working have presented are affecting higher occurrences of technostress on women compared to men. There seems to be an indication that men and women experience technostress differently and are more likely to be affected by the different techno-stressors (techno-overload and techno-invasion on men and techno-complexity and techno-uncertainty on women). The gender also seems to indicate the existence of technostress, where women were found to experience anxiety, skepticism, and inefficiency more with fatigue in the rise since the start of the pandemic. Though the experience of technostress is higher in women it does not seem to affect their job

performance indicating that coping mechanisms of women are effective from the employer's point of view.

2.1.3 Technostress during COVID-19

Since the start of the pandemic organizations have taken enormous digital leaps and introduced new digital tools for working with their employees. According to Oksanen et al. (2021, p.02), technostress is more likely to occur when new technologies are presented. The situation has been made unique by the fact that immediate support has not been available to the employees but they have had to encounter these changes while working independently and remotely from their work communities. According to Ringlea et al. (2021, p.133), during the COVID-19 pandemic employees have been exposed to fewer techno inhibitors and coping mechanisms, such as social interactions. It has been difficult for the organizations to offer the technostress inhibitors such as training and technical support traditionally when employees have been geographically spread out. Due to the lack of such support people have had to use all of their mental resources into adapting to the changing working environment during the COVID-19 pandemic (Ringlea, Rus, & Ratiu, 2021, p.124).

An example of one such digital leap, many organizations introduced digital communication applications such as Microsoft Teams, Yammer, or Zoom during the pandemic to help remote working. The usual face-to-face interactions with coworkers were hence moved to digital form. These applications can be harnessed in organizations to improve communication practices, knowledge sharing, and networking (Oksanen et al., 2021, p.02). These applications can be used for both formal and informal communication amongst the employees. Due to this nature, according to Oksanen et al. (2021, p.02), these applications can increase the ability to combine work and private life and enhance employees' work engagement.

Though these communication applications offer several benefits and can improve communication these can also be a source of technostress to some. Oksanen et al. (2021, p.02) indicate that these applications allow an employee to be bombarded with constant

notifications and messages, and make an employee available around the clock. Their (Oksanen et al., 2021, p.07) study also suggests that the more employees used these communication applications the more likely they were to suffer from technostress. Thus, these applications can create techno-overload and techno-invasion on users if these negative effects are not mitigated. Shift to digital communication may also, according to Oksanen et al. (2021, p.03), increase loneliness, fatigue, multitasking, and problems with concentration. Thus, digital communication applications can make employees experience techno-overload and techno-invasion leading to technostressors such as fatigue if these negative effects are not mitigated with technostress inhibitors such as training or IT mindfulness.

Oksanen et al. (2021, p.03, 08) found that technology intense remote working during the COVID-19 pandemic increased the likelihood of technostress, due to factors such as work-family conflict. Recent studies (Estrada-Muñoz et al., 2021, pp.09-10; Gabr et al., 2021; Penado Abilleira et al., 2021, p.09) have also found that gender, age, and low quality of ICT networks increased the likelihood of technostress during the pandemic. According to Gabr et al. (2021), older adults' technostress during the pandemic was due to a lack of cognitive and physical skills, which indicated increased techno-overload and techno-complexity. High hierarchy and authoritarian leadership were also found to increase technostress during the pandemic (Spagnoli et al., 2020, p.06). This indicates that in the organizations where employees were forced to continue with the old ways of working in the new surroundings, hence inhibiting them from flexibility and autonomy over their work, were more likely to suffer from technostress.

During the COVID-19 pandemic, employees have been forced to take more responsibility for the technologies. They have encountered new kinds of stressful situations, which they previously were not responsible for such as technology failures and network quality issues (Ioannou et al., 2022). Due to the distance and working in a home environment outside of their jurisdiction, it is difficult for an organization's technical support to help employees with these issues during the pandemic. Therefore employee's responsibility is increased. These problems can increase technostress on employees. Gabr et al. (2021) found in their study that poor Wi-Fi quality significantly increased the likelihood of

technostress on employees. They (Gabr et al., 2021) further found that technostress was increased on those employees living in rural areas. Rural areas in some countries can mean that network infrastructure is not as advanced indicating poor internet connection and increased likelihood of interruptions in connection, which disrupts employee's workday and workflow (Gabr et al., 2021).

Riglea et al. (2021, p.135) wrote in their article that during the COVID-19 pandemic technostress has had a negative effect on employees' well-being and it has intensified work-family conflict. In their research, Molino, Ingusci, Signore, Manuti, Giancaspro, Russo, Zito, & Cortese (2020, p.13) found that during the pandemic employees were more likely to experience techno-invasion, techno-overload, and techno-complexity. This finding together with findings by Oksanen et al. (2021, p.07) suggests that the working conditions during the COVID-19 pandemic are ideal for technostress to prosper. According to Riglea et al. (2021, p.135), these stressors also had a negative effect on employees' mental well-being. Riglea et al. (2021, p.133) further found that employees who experienced techno-overload or techno-invasion during the COVID-19 pandemic were more likely to look for a new job.

Molino et al. (2020, p.14) suggest that managers play a crucial role in mitigating the occurrence of technostress during the COVID-19 pandemic. This can be done by identifying techno-stressors in the organization, implementing techno inhibitors, and adopting policies, that better fit the current working environment (Molino et al., 2020, p.14). The importance of communication should not be forgotten as an important managerial tool to mitigate technostress. The study by Zito, Ingusci, Cortese, Giancaspro, Manuti, Molino, Signore & Russo (2021, p.14) found that communication especially during this uncertain time is an important way to reduce the occurrence of technostress.

During the COVID-19 pandemic there are many other ways, which can be used to mitigate technostress. For example, increasing employees' technical skills, recognizing employees' differences, providing targeted support mechanisms, helping to maintain work in working hours, as well as promoting well-being at work were suggested by literature (Molino et al., 2020, p.14; Oksanen et al., 2021, p.08;). Training is especially

important, as Oksanen et al. (2021, p.08) found in their research that individuals with high IT skills and computer confidence were better equipped to adjust to the digital leap during the COVID-19 pandemic. Ringlea et al. (2021, p.136) argue that technostress and its negative outcomes during the COVID-19 pandemic can also be mitigated by helping employees to maintain work-family borders and decreasing work-family conflict. Last but not least it is suggested by research (Molino et al., 2020, p.14; Ringlea et al., 2021, p.136) that psychological counseling should be made available by the organization to their employees during these difficult times.

2.2 Remote working

Remote work, virtual work, teleworking, telecommuting, agile working. Many names have been used to describe the phenomenon of using ICT solutions to work outside the residence of the employer (Carillo et al., 2020, p.70; Grant, Wallace, Spurgeon, Tramontano & Charalampous, 2019 p.17). In this study, the term remote working is used as it is the most often used term in Finland when describing this form of working. Remote working revolves around the idea that when employees perform their work it is more important what they do and not where they do it. According to Raiborn & Butler (2009, p.32), the original purpose of remote working was to reduce societal and environmental problems related to such issues as energy, pollution, traffic, and waste of resources, for example by remote workers not having to drive to work. In the research by Carillo et al. (2020, p.69) it was mentioned that before the COVID-19 pandemic around 5% of employees in the European Union practiced remote working regularly.

Before the pandemic offering remote working was seen as a strategic way to attain a competitive advantage and a benefit to offer to the employees (Carillo et al., 2020, p.70-71). It has several benefits for both the employee and the employer. From the employee's standpoint working from home allows cost-saving for example through not having to buy gasoline, lunches, or work suitable attire as well as through a possibility to make deductions from income taxes (Raiborn & Butler, 2009, p.33; Jacks, 2021, p.93). Employees would also save time by not having to commute to work. Based on the information from Eurostat (2020) in 2019 the average commute time in the EU is 25 minutes and 23 minutes in Finland. This constitutes 50-45 minutes spent commuting daily

and around 4 hours per week. Remote working also allows more flexibility for employees to combine their work and family lives for example through being able to use different forms or lengths of childcare or by using breaks to run private errands (Jacks, 2021, p.93; Anderson & Kelliher, 2020, p.678).

Based on the research (Raiborn & Butler, 2009, pp.33-34; Anderson & Kelliher, 2020, p.679) from an employer's perspective there are also numerous benefits. Offering remote working to their employees has been seen to increased job productivity, cost savings (for example on utilities), increased employee attraction and retentions as well as increased workforce stability (Raiborn & Butler, 2009, pp.33-34; Anderson & Kelliher, 2020, p.679). In the article by Anderson & Kelliher (2020, p.679) it is noted that high organizational commitment has also been linked to remote working and it has been explained by increased trust and the feelings of gratitude and being in debt to the employer.

The purpose of remote working has been to help employees to find a better balance between work and private life (Carillo et al., 2020, p.71; Raiborn & Butler, 2009, p.33; Grant et al., 2019 p.17). As written by Raiborn & Butler (2009, p.32) remote working allows the flexibility of employees to work on assigned tasks with the freedom to choose time, place, and pace by themselves. Subjects of the research by Sullivan & Lewis (2001, p.133) listed several advantages of remote working in the work domain, from which the most mentioned was increased independence and autonomy of work. Flexibility and autonomy of work have been determined to increase job satisfaction (Raiborn & Butler, 2009, p.33; Grant et al., 2019, p.17).

However, one cannot discuss the positive effects of remote working without mentioning the negatives as well. Many researchers (Carillo et al., 2020, p.70; Raiborn & Butler, 2009, p.35), have found that when working remotely employees tend to work longer hours than at the office. As noted in the research by Raiborn & Butler (2009, p.35), while the purpose of remote working has been to balance work and life it might create conflicts for instance in situations where the remote worker does not have a dedicated quiet place to work at home. According to Grant et al. (2019, pp.17-18) & Taser, Aydin, Torgaloz &

Rofcanin (2022, p.02), remote working has also been associated with for example poor well-being, overload in digital communication, increased work intensification, and more pressure towards the remote worker from the organization. These could affect employees' effectiveness and performance (Taser et al., 2022, p.02).

As pointed out by Raiborn & Butler (2009, p.35) remote workers are also lacking the support offered to office workers such as technical support. Remote workers are therefore required to take more responsibility for their working conditions and possibilities of working compared to their office working coworkers. From employers' perspective the negative sides to remote working according to Raiborn & Butler (2009, pp.35-37), is loss of control, raised concerns over data security, decreased efficiency of teamwork, increased costs, and increased role of the IT department and devices.

When remote workers meet their coworkers face-to-face less often, they are lacking social involvement and interactions resulting in social isolation and loneliness (Raiborn & Butler, 2009, p.35; Grant et al., 2019, p.21). Taser et al. (2022, p.2) define loneliness in the work context as a stressor to an individual, which occurs when they are isolated from their work community. Social isolation, according to Golden, Veiga & Dino (2008, p.1412), may make remote workers feel like they are not part of the community or not in the loop of interactions. Golden et al. (2008, p.1412) define social or professional isolation in their article, as a sense of being separated from others in a professional context., which can occur when an individual's needs for social interactions are not met at work. According to the article by Taser et al. (2022, p.4.), the risk of feeling lonely in remote working is especially high on employees whose work is complex and vague. Golden et al. (2008, pp.1413-1414) define three risk factors, which increase the likelihood of feeling socially isolated and lonely: extended remote working period, decreased amount of face-to-face interactions, and inability to communicate with coworkers through using digital communication tools.

Remote working may decrease the number of interactions between coworkers and result in an inability to communicate, obtain support, share knowledge, and learn from others (Taser et al., 2022, p.4). Social isolation and loneliness can have various effects on

employees. According to the research (Golden et al., 2008, p.1413; Taser et al., 2022, p.4), when feeling socially isolated or lonely employees are less productive, less confident, more likely to suffer from work-related anxiety, and their ability to absorb new information or knowledge decreases. Based on the article by Golden et al. (2008, p.1413), workers suffering from social isolation or loneliness are less committed to the organization and more likely to change jobs. In their study Taser et al. (2022, p.7), found that loneliness negatively affects employees' capabilities of working remotely. To tackle social isolation and loneliness organizations should improve their communication, encourage proactive communication by managers, offer informal activities to all employees, encourage knowledge sharing and encourage the use of digital communication tools (Golden et al., 2008, p.1419; Taser et al., 2022, p.7).

Remote working is based on mutual trust between the employee and the employer. The employer has to supervise the employee's performance from a distance, so honesty is required from the employee, therefore trusting relationship between these two parties is essential for remote working to succeed and to be effective (Gashi et al., 2021, p.375; Grant et al., 2019, p.20). Grant et al. (2019, p.18) wrote that having a trusting relationship between the employee and the manager can increase employees' self-management skills and therefore improve their work-life balance. Communication is key to ensuring trust between all parties (Gashi et al., 2021, p.375; Grant et al., 2019, p.20).

Several factors to ensure successful remote working is listed in the research by Gashi et al. (2021, p.375), such factors are managerial support, communication, guidelines, policies, and relevant training, which should be used to ensure success. Especially organizational support has been found to increase remote workers' job satisfaction and well-being (Gashi et al., 2021, p.375). Grant et al. (2019, p.28) make a similar finding in their research where they found that a supportive and trustful relationship between the organization and the employee promotes employee's self-claimed mental well-being and vitality as well as the vitality of the organization.

Bussin & Swart-Opperman (2021, p.3) wrote that certain personality characteristics make an employee suitable for remote work. According to Bussin & Swart-Opperman (2021,

p.3), employees who are most suitable for remote working are introverts and high performers. They tend to need less of a connection with their coworkers and are practice-oriented and rely on set rules and guidelines instead of their feelings (Bussin & Swart-Opperman, 2021, p.3). Bussin & Swart-Opperman (2021, p.3) argue that employees who do not have these characteristics tend to become bored of remote working faster and might start to develop negative emotions such as anxiety, frustration, loneliness, and feelings of being misinterpreted.

However, characteristics alone do not make a good remote worker. Just because one worker has all the needed characteristics to work remotely does not alone mean they will succeed in remote working. Many skills for successful remote working can also be learned, such as time- and self-management skills. Taser et al. (2022, p.2.) indicate that when employees are supported by their organizations, they are better equipped to handle possible stressors and negative emotions remote working might cause. Positive remote working experiences are a key to ensuring well-being and success in remote working (Taser et al., 2022, p.4).

2.2.1 Concepts and theories in remote working research

In this part, we examine two concepts and theories used in remote working research E-Work Life (EWL) scale and the work-family border theory. First, we introduce EWL Scale and how it can be used to assess the remote working experience. Second, we introduce work-family border theory and how it examines the combination of these two domains in individuals' lives.

2.2.1.1 E-Work Life Scale

Grant et al. developed in their 2019 research paper an E-Work Life (EWL) Scale. EWL Scale's purpose is to assess the remote working experience through remote worker's abilities, perceptions, and skills in four areas: Effectiveness and productivity, organizational trust, flexibility, and work-life balance (Grant et al., 2019, p.16). In Figure 05. this scale has been demonstrated. EWL is a unique scale, which takes into consideration employees' side to the remote working while also providing measures for

managing and supporting remote workers. This scale also presents the necessary skills remote workers should have to ensure the success of their remote working.

<p><u>E-Work Life Scale:</u></p> <p>Effectiveness & productivity</p> <p>Organizational trust</p> <p>Flexibility</p> <p>Work-life balance</p>

Figure 05. *E-Work Life Scale (Grant et al., 2019)*

According to Grant et al. (2019, p.18), EWL Scale is meant to provide a holistic view of remote working experience where all areas are as important and create value to the remote worker. They (Grant et al., 2019, p.18) give an example of when a remote worker has a trusting relationship with their supervisor it can increase their self-management skills, which in return will increase their work-life balance and well-being at work. From an organization's perspective measuring remote working experience is important as it can help increase productivity and ensure employee well-being (Grant et al., 2019, p.28).

Effectiveness and productivity in EWL Scale relate to remote worker's abilities and skills to perform their work and meet the organization's targets remotely (Gashi et al., 2021, p.375). Grant et al. (2019, pp.25-27) mention that in their scale there are four items, which are used to measure remote working experience in this area:

- "When working remotely I can concentrate better on my work tasks"
- "Remote working makes me more effective to deliver against my key objectives and deliverables"
- "If I am interrupted by family/ other responsibilities while working remotely, I still meet my manager's quality expectations"
- "My overall job productivity has increased by my abilities to work remotely"

These items help to assess remote worker's personal skills to ensure an effective and productive remote working experience.

The second area of the EWL Scale is organizational trust, which Gashi et al. (2021, p.375) define as remote worker's perception of the support and trust they receive from their organization. Grant et al. (2019, pp.25-27) measure this area with the help of three items:

- "My organization provides training in remote working skills and behaviors"
- "My organization trusts me to be effective in my role when I work remotely"
- "I trust my organization to provide good remote working facilities to allow me to work effectively"

These items assess remote worker's views on their organization's perceptions and attitudes towards remote working and its remote workers. It notes that remote worker is part of an organization, which can affect the remote working experience heavily.

The EWL Scale's flexibility is defined by Gashi et al. (2021, p.375) as remote worker's perceptions of the flexibility they have over how and when they work while working remotely. This area is divided by Grant et al. (2019, pp.25-27) into three measurable items:

- "My manager gives me total control over when and how I get my work completed when working remotely"
- "My work is so flexible I could easily take time off working remotely, if and when I want to"
- "My line manager allows me to flex my hours to meet my needs, providing all the work is completed"

These items help to assess how flexible remote worker perceives their work and how flexible they perceive their organization to be.

The last area of the EWL Scale is work-life balance. This refers to remote worker's ability to manage boundaries between their work and private lives (Gashi et al., 2021, p.375). According to Grant et al. (2019, pp.25-27), this is the most extensive area, which is measured using seven different items:

- "My remote working takes up time that I would like to spend with family/friends or on other non-work activities"
- "When working remotely I often think about work-related problems outside my normal working hours"

- "I am happy with my work-life balance when working remotely"
- "Constant access to work through remote working is very tiring"
- "When remotely working from home I do know when to switch off/ put work down so that I can rest"
- "I feel that work demands are much higher when I am working remotely"
- "My social life is poor when working remotely"

These items in the work-life balance area are to help assess remote worker's abilities to combine their work and private lives, to understand and set boundaries between these two, and to shift from one area of life to another.

In Figure 06. EWL Scale areas are combined with all of the 17 items defined by Grant et al. (2019, pp. 25-27). Gashi et al. (2021, p.380) tested how well the EWL Scale suites for examining remote working experience while researching remote working in Kosovo during the COVID-19 pandemic. Gashi et al. (2021, p.380) reduced the number of items on the scale from 17 to 13 and combined effectiveness & productivity, and organizational trust areas. Gashi et al. (2021, p.380) argued that this was necessary as items from organizational trust all related to remote workers' effectiveness. In this research, these two items were kept separate as there is a clear distinction between these two areas. Effectiveness and productivity area relates to employee's internal skills, which create productivity while organizational trust is about external factors supporting remote working and effectiveness.

Remote working experience is not only about employee's skills and abilities but also about the conditions the organization creates, which should not be forgotten. According to Gashi et al. (2021, pp.380-381), EWL Scale was found to be an effective tool to measure remote working experience. Gashi et al., (2021, p.381) further conclude that EWL Scale is a very beneficial tool not only for employees but for managers and organizations as well. This is because it can help an employee to identify areas in their remote working abilities and habits, which need improvement, help managers to understand their employees' remote working abilities, and show improvement areas for organization's remote working attitudes, policies, strategies, and support systems to increase productivity in remote working (Gashi et al. 2021, p.381).

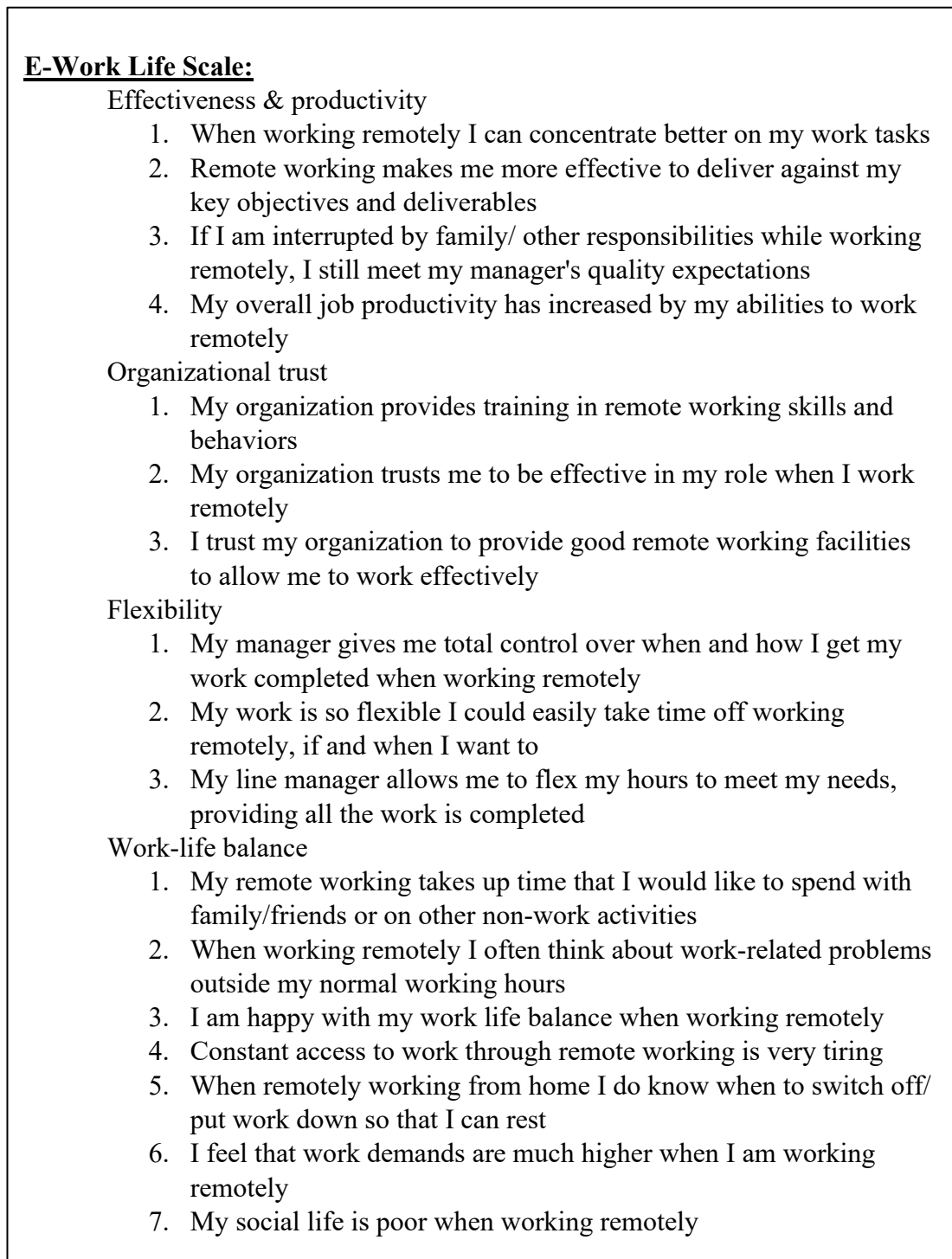


Figure 06. *Revised E-Work Life Scale (Grant et al., 2019)*

2.2.1.2 Work-Family border theory

While EWL Scale was developed to measure remote working experience the work-family border theory can be used to examine the outcomes of remote working in work-family

balance. This theory was created by Clark for their article published in 2000. According to Clark (2000, pp.750-751), this theory revolves around the idea that work and family lives are separate from each other but they influence each other. People generally have different kinds of roles at work and at home. At Work, they might be following orders and not have to make any major decisions and in contrast at home, they are the main decision-makers. Clark (2000, p.750) describes that the purpose of the work-family border theory is to study how people balance between work and family by examining ways they shift between these two areas and manage the borders between them.

Four important components in work-family border theory are: “*domains*”, “*borders*”, “*border-crossers*”, and “*border-keepers and domain members*”. Clark (2000, p.753) calls work and home as domains, meaning differing social situations, which have different purposes in people’s lives and where different kinds of rules, behaviors, culture, and thoughts apply. Clark (2000, p.756) defines borders as separators of the domains, which define where domain-related aspects start and end. Border-crossers are defined by Clark (2000, p.759) as an individual whose creation the specific domains are and who shifts between the created domains. Finally, according to Clark (2000, p.761), border-keepers and domain members are other people in the domains. Those people that define the domain, like managers at work or spouses at home, are called border-keepers (Clark, 2000, p.761). Other people, who are part of a specific domain but do not define it per se, according to Clark (2000, p.761), are called domain members.

Three different kinds of borders, which separate these domains are “physical”, “temporal” and “psychological” (Clark, 2000, p.756). Physical borders are concrete separators of the domains, such as locations or walls, these borders define where the domain occurs (Clark, 2000. p.756). Temporal borders, according to Clark (2000, p.756), mean set times related to the domain, such as working hours, and define when the domain occurs. Psychological borders, on the other hand, are personal principles of the individual, which direct the individual on how to act, behave or think in the domain (Clark, 2000, p.756). In Figure 07. all of the components and their interdependencies, of the work-family border theory are presented.

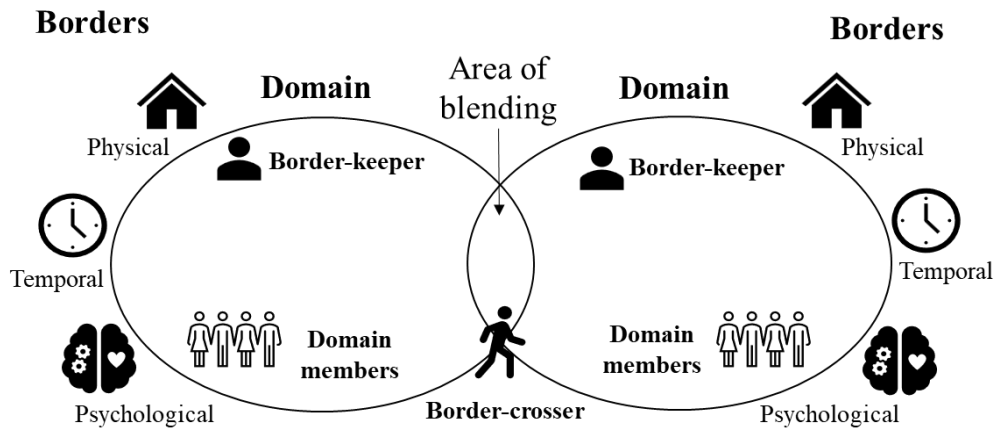


Figure 07. *Work-Family border theory (Clark, 2000)*

The borders in the work-family border theory are characterized according to their permeability, flexibility, blending, and border strength (Clark, 2000, pp.756-758). Permeability, according to Clark (2000, p.756), refers to an element's ability of interference and entrance from one domain to another. For example, work may interfere with free time through an electronic device notifying of a new work email, or home may interfere with work time when working from home family members may enter a home office. Clark (2000, p.756) also notes that psychological factors, such as emotions, attitudes, or ideas, can as well permeate from one domain to another.

According to Clark (2000, p.757), flexibility means domain borders' ability to withdraw or expand based on the needs or demands of another domain. For example, in remote working physical borders of the work domain are flexible and allow work to be done at another place than the office and the home domain's borders are flexible when allowing remote working from home. Then on the other hand, when the work domain allows errands to be run during work hours temporal borders of the work domain are flexible.

Blending is defined by Clark (2000, p.757) as an occurrence of permeability and flexibility of the domain borders. Blending is an area, which cannot be defined to belong to either domain like commuting from one domain to another, using experience from one domain to another, or running a family business (Clark, 2000, p.757). Finally, the border strength is referred to by Clark (2000, p.758) as a combination of the three aforementioned characteristics. The strong borders, according to Clark (2000, p.758), are

those with very little permeability, flexibility, or blending and the weak borders are those with high permeability, flexibility, and blending.

When there is an imbalance between work and family domains or one domain permeates to another too much the situation is called work-family conflict. Based on the article by Kinnunen, Feldt, Geurts, & Pulkkinen (2006, p.150) work-family conflict is highly related to role pressures and role conflicts between the domains. According to Leung & Zhang (2017, p.387), work-family conflict can occur because one domain interferes and limits the individual's performance in another domain. When one domain permeates negatively over to another domain it is called interference, most often work-family interference can be found but finding family-work interference is not uncommon (Kinnunen et al., 2006, p.150). According to the research (Kinnunen et al., 2006, p.150; Leung & Zhang, 2017, p.387), work-family conflict can lead to mental and physical health problems of the employee. Work-family conflict has also been shown to indicate decreased work-related well-being and job satisfaction (Kinnunen et al., 2006, p.150; Leung & Zhang, 2017, p.387). According to Leung & Zhang (2017, pp.387-388), high permeability and low flexibility, especially in the work domain, increase the risk of work-family conflict, whereas high flexibility lowers the risk.

Clark (2000, pp.764-765) argues that to increase the work-family balance the domains and the borders must be altered and cooperation between the domains is needed. These especially apply to the work domain. The balance cannot only be achieved by changing the permeability and the flexibility of the physical or the temporal borders of the domain but requires changes in psychological borders, such as culture and attitudes, as well (Clark, 2000, p.765). Clark (2000, p.765-766) suggests that if these changes in the psychological borders cannot be made in the organization, then strong borders between the domains should be kept.

Not only are the borders important in creating work-family balance but so are the people within the domains. Clark (2000, p.766) emphasizes the importance of the border-keepers and the relationships between the border-keepers and the border-crossers. The border-keepers, such as managers, should support the border-crossers and help them to maintain

work-family balance by allowing, for example, additional flexibility when needed (Clark, 2000, p.766). Clark (2000, p.766) also suggests that work-family balance is easier to maintain and control when the border-crossers have been assimilated to all of their domains cultures and feel like important members of all of their domains and have created bonds between other members in their domains.

Individuals can support the balance between their work and family domains by actively participating in the domains and utilizing communication (Clark, 2000, p.766). Clark (2000, p.766) suggests that the border-crossers make their border-keepers and domain members aware of their situations to receive support from them. According to Clark (2000, p.767), when the border-crossers actively participate in their domains they can develop closer relationships with the other members of their domains and learn and understand their responsibilities better. Through these actions the border-crossers can make all of their domains part of their identity; hence, will find a better balance between the domains.

Leung & Zhan (2017) tested the work-family border theory to examine how remote work, especially work-related ICT use at home, affects the borders characteristics and work-family balance. They (Leung & Zhan, 2017, p.393) found that remote working made the borders between the work and family domains both flexible and permeable. Leung & Zhan (2017, p.393) indicate that remote working has therefore both positive and negative sides, where it can be liberating and invasive simultaneously.

Interestingly, Leung & Zhan (2017, p.393) found that remote working itself is not an indicator of work-family conflict or technostress but the work domain's borders' low flexibility and high permeability are. This supports Clark's claims on the need for organizations to change the flexibility of their psychological borders to increase their employees' work-family balance. When an organization allows its employees to work remotely the physical borders of the work domain are flexible but there might still be old attitudes and culture related to remote work, which makes remote working difficult for its employees. According to the research by Leung & Zhan (2017, p.394), family support and flexibility at work are the keys to maintaining work-family balance.

2.2.2 Remote working and gender

According to the article by Çoban (2022, p.242), before the pandemic women were slightly more interested in working remotely than men. Several of the research claims that the reason for this interest is because it is easier for women to fulfill their dual role of a mother and an employee when working remotely from home (Sullivan & Lewis, 2001, p.133; Leung & Zhang, 2016, p.386). Though Sullivan & Lewis (2001, p.125) mention this could be because women are more likely to report domestic issues to be the reason of desire to work remotely than men and are more prone to put family before their work.

In their study, Sullivan & Lewis (2000, p.133) found that there was a clear distinction between the motivation of working remotely for men and women. Men were more likely to start working remotely for work and individual reasons, whereas women were more likely to do so due to domestic reasons (Sullivan & Lewis, 2000, p.133). Çoban (2020, p.242, 252) indicates that even though women are active participants of the workforce the main responsibility of the housework still is on them, or if the responsibilities have been divided equally women take the final responsibility. This supports the claim that women have the main responsibility of the metawork of the domestic issues.

Sullivan & Lewis (2001, p.124) present in their article the new opportunities for flexibility model, in which remote working is presented as an option to add more women to the workforce when childcare and work are easier to combine. These factors do seem to be appealing to some women as the research by Sullivan & Lewis (2001, p.130) showed that the primary motivation for women to choose remote working was to combine work with family life. According to Sullivan & Lewis (2001, p.125), oftentimes remote working was viewed as the only option for women to combine work and family lives. This view could be cultural and might not apply to Finland where affordable daycare is available to all families.

While remote working has been promoted as a way to equalize work-family balance many studies have shown it to also reinforce typical gender roles (Çoban, 2020, p.243). According to Çoban (2022, p.243), remote working can also reinforce the work-family

conflict on women especially if they have a parental role. This was supported by Kinnunen et al. (2006, p.152) who wrote that having children under seven years old increases the likely hood of work-family conflict on women.

In their article, Kinnunen et al. (2006, p.153) wrote that Finnish women working in higher white-collar jobs were more likely to suffer from work-family conflict than their male counterparts. Kinnunen et al. (2006, p.150) also wrote that when women suffered from the work-family conflict it had a negative correlation to their well-being and job satisfaction, whereas similar findings were not found in men.

Çoban (2022, p.243-245) argues that remote working broadens traditional roles and responsibilities of a woman, in such ways as childcare, housework, gendered family structures, and time use. Remote working, therefore, makes the home and work domains' border's more permeable and reinforces the gender stereotypes in both domains. According to Sullivan & Lewis (2001, pp.124-125), the exploitation model views remote working as a way to exploit women by isolating them and having to submit to the demands of the family and the employer. Çoban (2022, p.253) argues that remote working has a risk of making women's contributions to the organizations invisible, therefore might alienate them from the job market. Though there seem to be issues in gender roles while remote working the exploitation model does not take into consideration the free will of women or women without children working remotely who do not have the same domestic responsibilities as women with children might have.

Çoban (2022, p.248) discovered that women prefer remote working because it makes borders in both work and family domains more flexible requiring for example less physical effort from them. However, studies have found that women used the time saved when working remotely to take care of family matters instead of personal needs or recovery (Anderson & Kelliher, 2020, p.680; Çoban, 2022, p.248).

Sullivan & Lewis (2001, p.127) wrote that remote working women experienced less work-family interference. Sullivan & Lewis (2001, p.136) found in their research that men reported more often about the interference of the work domain to the family domain,

whereas women reported more often about the interference of the family domain to the work domain. Çoban (2022, p.252-253) also states that remote working creates work-family conflict more likely on women than on men and that it is more difficult for women to reach work-life balance. Sullivan & Lewis (2001, p.127) wrote that remote working women reported the occurrence of role conflict more often than their office working counterparts.

When discussing the advantages of remote working though both genders highlighted similar work-related advantages there seemed to be differences in advantages related to family (Sullivan & Lewis, 2001, p.133). According to the research by Sullivan & Lewis (2001, pp.133-134), women reported that remote working helps them to fulfill their domestic role, whereas men reported that remote working helps them to be more involved in domestic matters and spend more time with their families. To conclude, women use remote working to be better mothers and employees whereas are men use remote working to save time and be able to be involved at home. Though these findings are over twenty years old similar remarks can be found from Çoban's (2022) article. Still, both of the articles report the view of women with children and neglect to report other views such as single household female employees' reasons to work remotely.

Remote working habits also seem to differ between men and women. Sullivan & Lewis (2001, p.136) reported that women with children are more likely to use the flexibility offered by remote working to ensure work-family balance. Whereas men and women without children were more likely to work longer and put in extra hours when working remotely (Sullivan & Lewis, 2001, p.136). Women have also been reported to be more likely to multitask with their domestic and work tasks during their work hours than men (Sullivan & Lewis; 2001, p.138; Craig & Churchill, 2020, p.68).

2.2.3 Remote working during COVID-19

The shift from office working to remote working at the beginning of the COVID-19 pandemic came quickly and unannounced. Despite organizations' efforts to have acceleratingly digitalized processes, the pandemic took everyone by surprise. This meant that employees and organizations were unprepared for the sudden remote working

(Carillo et al., 2020, pp.69-71). It has been a drastic change, requiring organizations and individuals across the fields to adjust to new ways of working without much preparation or adjustment period (Carillo et al., 2020, pp.71-72; De, Pandey & Pal, 2020, p.1; Bussin & Swart-Opperman, 2021, p.2; Taser et al., 2022, p.3). Not only were organizations missing a proper technical environment to enable remote working, but they were also missing organizational culture and managerial tools to support remote working (Carillo et al., 2020, pp.69-71).

Remote working was introduced during the COVID-19 pandemic not only to ensure social distancing but most importantly to ensure business continuity. It has been considered the most efficient way to do so, according to Carillo et al. (2020, p.71). In the research by Jacks (2021, p.94) new daily remote working model has been mentioned to increase employee productivity in organizations. It could therefore be argued that it has met the expectations set to it to ensure business continuity. However, it should be noted that this has been true for only those organizations where remote working is possible, mostly organizations employing white-collar workers (Jacks, 2021, p.94).

When considering how does remote working before the pandemic differs from remote working during the pandemic, one of the main differences, according to Carillo et al. (2020, p.70), is flexibility. The flexibility is missing from both, the flexibility to choose a working location and the flexibility to choose one's working hours (Anderson & Kelliher, 2020, p.678; Carillo et al., 2020, pp.70-72;). Due to lockdowns and travel restrictions, it is a lot more difficult to work remotely from other locations than your home. Working hours for remote working are now more or less the typical office hours and require full-time attendance due to schedules of online meetings. The most obvious difference between remote working before the pandemic and during the pandemic is the flexibility to choose to or choose not to work remotely. According to Anderson & Kelliher (2020, p.679), due to this reason employees feel less of the psychological benefits such as a sense of autonomy when working remotely during the pandemic.

The uniqueness of the COVID-19 remote working conditions, compared to previous remote working conditions, is related to the additional stress caused to employees by the

uncertainty of their health, safety, economic situation concerning the future of their employment (Carillo et al., 2020, p.71; Bussin & Swart-Opperman, 2021, p.2). However, it does not only limit to these.

As Jacks (2021, p.96) remarks remote working during the COVID-19 pandemic is a shared experience, which every individual experiences in their own way due to situational differences. Lockdown measures in some countries and closure of schools and daycare centers meant some employees have had to juggle between taking care of their domestic and work tasks simultaneously. Anderson & Kelliher (2020, p.678) indicate that all of a sudden parents become teachers on top of their employee duties, having to multitask between ensuring their children's education and their work. These measures have interfered with people's daily routines and blurred the lines between work and family lives (Gabr et al., 2021).

Additional problems and stressors on employees created by the sudden remote working have been the inability to find suitable working space at home, lack of needed equipment, and having to be responsible for the reliability of the internet connection (Anderson & Kelliher, 2020, p.678). Though some elements of remote working during the COVID-19 pandemic have elevated employees' stress levels others have reduced them. Craig & Churchill (2020, p.76) report that time-related stress and pressure amongst the employees have reduced during the pandemic due to saving time from commuting and taking children to their activities as well as due to increased flexibility at work.

Carillo et al. (2020) studied French employees' adjustment to remote working during the COVID-19 pandemic. They (Carillo et al., 2020, p.78) found that one of the main obstacles for adjustment to remote working was the lack of professional social interactions, creating feelings of professional isolation. The COVID-19 has changed the work culture. Coworkers are no longer concrete human beings but voices, pictures, and videos on devices.

The serendipitous conversations with coworkers, informal conversations, personal feedback, pre and post meeting small talk, and accidental encounters with coworkers from

different departments are all missing when people work by themselves at home. (Carillo et al., 2020, p.78; Jacks, 2021, p.94). The organizations have tried to tackle this issue by offering for example virtual “open door” hours where employees can reach out to their managers or executives for discussion (Jacks, 2021, p.94). Carillo et al. (2020, p.80) suggest that organizations should consider offering their employees personal support and monitoring to help employees with the adjustment to remote work.

According to the research by Carillo et al. (2020, pp.78-79), remote working conditions were found to be the second important factor for adjusting to remote work. The remote working conditions here refer to both external working conditions such as working tools and remote working environment, as well as internal conditions such as mental state, self-management skills, and work-life balance skills. In their research, Carillo et al. (2020, p.79) determined stress as one of the most important factors influencing adjustment to remote work, especially in a crisis. According to Carillo et al. (2020, p.80), stress can negatively affect a person’s capability to adapt to changing circumstances, and therefore requires special attention from management to help them adapt. Having previous remote working experience was found by Carillo et al. (2020, p.80) to have a positive influence on adjusting to remote work. Overall, it is suggested by Carillo et al. (2020, p.80) that time and experience are the best tools to adjust to remote work, employees become more and more adjusted to remote working the longer they work remotely.

Carillo et al. (2020, p.71) found that during the COVID-19 pandemic it has become harder for individuals to balance their work and family lives, increasing the chance of work-family conflict. According to Craig & Churchill (2020, p.75), the COVID-19 has disrupted the work patterns and increased the burden of domestic work on employees. Craig & Churchill (2020, p.77) found that especially female employees have experienced increased work-family conflict during the pandemic. In the study by Çoban (2022, p.249) it was argued that during the COVID-19 pandemic the stereotypical domestic roles have been reinforced and women have been distanced from their career and professional identities. Çoban (2022, p.250) explains that this could be due to the unevenly divided domestic workload during the pandemic, which was also discovered in the study. Due to

these reasons, women have found remote working to be highly inefficient during the pandemic (Çoban, 2022, p.251).

However, these findings can be very cultural. Çoban's study was conducted in Turkey whereas Craig & Churchill conducted their study in Australia and found bit differing results. Though Craig & Churchill (2020, p.75) had found that the amount of domestic work on women had increased so had it on men and the gender gap had narrowed during the pandemic. It should be still noted that women's domestic work had increased significantly more than men's (Craig & Churchill, 2020, p.75). In conclusion, remote working during the COVID-19 pandemic has deepened the work-family conflict on women and made the family domain more permeable to the work domain. Gabir et al. (2021) suggest that employees should try to be very strict with their working hours and schedule and ensure to maintain the borders between their work and family lives. Employees should also, if possible, try to arrange dedicated working space in their homes to improve their working conditions and to dedicate a place for work (Gabr et al., 2021).

When it comes to general support most usually offered by the organizations, such as training on how to remote working tools, Carillo et al. (2020, p.80) found that it did not support employees' adjustment to remote work. Though this does not mean that it is not important for organizations to offer this kind of support in the future. These measures might not affect adjusting to remote working but can ensure a healthy remote working environment in the organization.

In fact, to ensure healthy remote working conditions during the COVID-19 pandemic for their employees, and to ensure the right kind of remote working skills, Gabr et al. (2021) suggest that organizations should increase the amount of work skills training provided to their employees and provide responsive IT support. As the circumstances during the pandemic are very unique and new to all employees, a supportive atmosphere is also needed. Gabr et al. (2021) therefore suggest that organizations should in addition to all other supportive measures send motivational messages to their employees to inspire and encourage them during these times.

Remote working during the pandemic has also had its weaknesses from the organizational standpoint. Similar benefits and gains provided by remote working cannot be expected by the organizations as the circumstances have changed the nature of remote working, where remote working is not a chosen working form for the majority of the employees (Anderson & Kelliher, 2020, p.681). For example, employees are not as committed to their organization as they would be when choosing to work remotely (Anderson & Kelliher, 2020, p.681). Organizations also have to battle with employees' emotional distress, the uncertainty of the available workforce, as well as financial struggles and uncertainty of the sustainability of the business the slowing global trade, might cause (Bussin & Swart-Opperman, 2021, p.2).

Organizations have also all of a sudden been geographically divided to several locations not chosen by them. As Jacks (2021, p.94) highlights it is hard for organizations to ensure proper infrastructure in the areas where their employees remote working areas. Therefore, it is a lot more difficult for organizations to prepare for possible natural disasters or other occurrences, which affect internet or power connections. Gabr et al. (2021) found in their study that living in rural areas and having to deal with poor internet connection increased the risk of mental distress and especially technostress on employees.

The pandemic and the introduction of technologies, and daily remote working for all capable, have started to transform the organizations and the transformation will most likely not stop to the pandemic but will continue in the future (Jacks, 2021, p.93). Organizations need to prepare that there is no going back to "normal" as the nature of work has already changed (Carillo et al.,2020, p.82). According to Carillo et al. (2020, p.82), it is important that organizations will consider remote working in their future business continuity plans and will reflect its constraints in both physical and virtual environments.

After the national remote working recommendations are lifted organizations will most likely face resistance from their employees not wanting to return to full-time office work. De et al. (2020, p.4) suggest that organizations should be prepared to and understand that resistance to change is a normal coping mechanism for people and therefore, focus their

energy on managing the change and supporting their employees through it. According to Anderson & Kelliher (2020, p.681), organizations should focus on their duty to care for their employees' well-being and not make unnecessary changes to their remote working guidelines and policies without evidence supporting it. Therefore, it is important to understand that since the start of the pandemic remote working has become the norm around the world and it simple is "just" work (Bussin & Swart-Opperman, 2021, p.3; Jacks, 2021, p.93).

2.3 Technostress in remote working

Remote working is during the COVID-19 pandemic main form of working for a majority of knowledge workers. Therefore, it is no wonder that academic research has studied this phenomenon through its advantages, and disadvantages. According to Carillo et al. (2020, p.70), the most recent research on remote working has been focusing on the stress aspect of remote work, moreover technostress caused by remote working. This is because remote working seems to be an ideal environment for technostress and to study technostress (Carillo et al., 2020, p.70). As we have previously learned, remote working limits the availability of organizational support and technostress inhibitors to the employee. This requires more independence and IT skills from the employees to handle the new digital tools related to working remotely. Hence employees are more vulnerable to the technostressors and their negative effects.

Many aspects of remote working can increase the likelihood of technostress in remote work. In their article, De et al. (2020, p.2) suggest that remote working can increase technostress through an employee having to be available at all times and an employee having the feeling of being monitored while working remotely. Leung & Zhang (2017, p.394) suggest in their article, that the more intense remote working is to an individual the more likely they are to suffer from technostress. Gabr et al. (2021) note in their research, that technostress in remote working is caused by both external and internal risk factors, and the likelihood is affected by individual characteristics. In their (Gabr et al., 2021) study, they found that the most significant risk factors, which cause technostress were individual characteristics such as gender and age, and external factors such as the quality of the internet connection.

Organizational attitudes, hierarchies, and policies can also affect the likelihood of technostress in remote work. Spagnoli et al. (2021, p.06) found that in those organizations where hierarchy concerning remote working was high employees were more likely to suffer from technostress. Leung & Zhang (2017) studied this issue from the opposite direction and had similar findings to Spagnoli et al. (2020). They (Leung & Zhang (2017, p.394) found that in the organizations where policies related to remote working were flexible their employees were less likely to suffer from technostress. Hence, employees who are given the freedom and autonomy are more likely to find more suitable ways of working and are better equipped to combine work and family lives, which mitigate the risk of technostress.

Molino et al. (2020, p.13) found a significant correlation between remote working and techno-stressors in their study. They (Molino et al., 2020, p.13) found that when working remotely employees were exposed to techno-overload and techno-invasion. De et al. (2020, p.02) suggest that factors such as having to constantly learn new technologies, being constantly available, being in front of digital devices for hours, and increased multitasking increase technostress in remote work. The factors described by De et al. (2020) support Molino et al.'s (2020) findings as the mentioned factors are characteristics of techno-overload and techno-invasion. Leung & Zhang (2017, p.394) further suggest that the more permeable the work domain is the more likely are individuals to suffer from techno-overload and techno-invasion, as the high permeability increases the intrusion of work to their recovery time.

When work is done at home environment work-family borders are put to test and work-family conflict is inevitable. Work-family conflict can both be a cause of technostress as well as be a symptom of technostress. Molino et al. (2020, p.13) found in their study that techno-stressors, especially techno-invasion, can increase work-family conflict in remote work. These findings supported the view of technostress being the cause of work-family conflict. Whereas Leung & Zhang (2017, p.394) found that work-family conflict is the primary cause of techno-overload and techno-invasion. This would support the claim that work-family conflict can also cause or be a source of technostress when combined with the right kind of circumstances. Technostress and work-family conflict may also both be

negative effects of remote work. As Ringlea et al. (2021 p.133) reported, those individuals who experienced techno-invasion during the remote working also were more likely to experience work-family conflict. They (Ringlea et al., 2021, p.135) also found that when an employee's mental well-being is low, the more likely is techno-overload to affect them and hence create more work-family conflict in remote work.

Remote working and technostress may have several consequences. Ringlea et al. (2021, p.135) found in their study that employees' mental well-being had been negatively affected by remote working and technostress. Studies (Oksanen et al., 2021, p.03) have also reported findings of technostrains especially fatigue during remote work. Technostress in remote working has also been linked to other psychological issues. Taser et al. (2022, p.06) found that those employees who suffered from technostress were also more likely to feel lonely and suffered from social isolation.

When considering the factors to help mitigate technostress in remote working previously presented techno inhibitors would seem to be important remotely as well. Oksanen et al. (2021, p.07) found that techno inhibitors and individual characteristics helped to mitigate the occurrence of technostress during the shift to remote working. Employees with high IT skills and computer confidence were less likely to suffer from technostress during remote working (Oksanen et al., 2021, p.08). Technostress inhibitors do not seem to help with just technostress but with other negative aspects of remote working as well. Oksanen et al. (2021, p.08) found in their study that technostress inhibitors such as training and increased computer confidence helped employees to manage work-family conflict better.

Though aspects of social support are limited during remote working employees can try to utilize other kinds of coping mechanisms. Taser et al. (2022, p.6) found in their research that employees who enjoyed working remotely were less likely to suffer from technostress. This would suggest that these employees have positive attitudes towards the ICTs and towards improving their IT skills. These are part of the positive interpretation coping mechanism, which has been found by Tarafdar et al. (2020, p.86) to be one of the coping mechanisms to technostress. The positive interpretation is one of the proactive

coping mechanisms, which have been found to be the most effective mechanisms to cope with technostress and alleviate their negative effects.

Remote working seems to be an ideal environment to technostress as it limits many of the techno inhibitors. This requires organizations to find new kinds of ways to support their employees' well-being at work and to consider the personal differences of their employees.

3 RESEARCH METHODS

In this chapter, the research and data collection methods and the process used to conduct this research are reviewed, furthermore, the reasons for choosing these methods are explained. In this research, qualitative methods were used to study the technostress phenomenon. Tarafdar et al. (2019, pp.11-12) argue that technostress is a process or phenomenon, due to which it is not something that can be measured but something that can be assessed through different kinds of aspects and variables. According to Adams, Khan, & Raeside (2007, p.6), qualitative research uses data collection and analysis methods to study a phenomenon by describing the experiences of the study subjects. For these reasons, qualitative methods were viewed as the more suitable method to study technostress.

Researchers (Gabr et al., 2021; Spagnoli et al., 2020) have recently studied technostress on remote working during the COVID-19 pandemic mainly by using quantitative methods and surveys. Hence, recent research has been lacking qualitative research, which can better capture the experiences of individuals. Technostress is a personal experience, which can be suffered from various reasons based on the person's individual experiences and conditions. For this reason, it is important to capture the experiences of remote workers and to deepen the knowledge about technostress experiences. Adams et al. (2007, p. 6) remark that qualitative methods offer diverse methods for capturing both the health and well-being as well as the daily domestic and professional lives of the study subjects.

3.1 Data collection methods

Tuomi & Sarajärvi (2018) suggest that when studying a person's behavior or intentions, the most suitable method for data collection is through questions. The best way to understand how a person is feeling or why they choose to behave in a specific manner than by asking them directly (Tuomi & Sarajärvi, 2018). According to Adams et al. (2007, p. 97), interviews provide qualitative data, which offers in-depth material to understand subjects' behavior and feelings. Tuomi & Sarajärvi (2018) remark that one of the benefits of the interview is its flexibility. An interview provides the possibility to repeat or clarify questions to the subject (Tuomi & Sarajärvi, 2018). Subjects are able to provide longer

and more in-depth answers even to simple questions, and questions can be asked in any order if similar topics come up in the subject's answers (Tuomi & Sarajärvi, 2018). According to Tuomi & Sarajärvi (2018), an interview is a social event, it, therefore, eliminates a feeling of being tested, which is usual to a survey, and relieves the subject of having to answer in a specific way to provide the right answer. Tuomi & Sarajärvi (2018) also indicate that an interview provides a possibility for the researcher to act not only as a researcher but as an observer as well. The researcher can make observations about the subject's body language during their answer or from the tones, in which the answer was given (Tuomi & Sarajärvi, 2018). An additional benefit of an interview, according to Tuomi & Sarajärvi (2018), is the researcher's ability to choose the subjects and ensure that they fit the requirements of the study.

A semi-structured interview is an interview, which follows an agreed theme or path with a set of predetermined questions, to which the interviewer may add additional questions if clarification is required (Adams et al., 2007 p. 144; Tuomi & Sarajärvi, 2018). A semi-structured interview may include both open and close-ended questions to provide both factual data from the subject (for example basic information about the subject, age, level of experience, or how many digital tools they use while working) and attitudinal data (for example subject's attitudes towards the researched subject, what they think about digital tools) (McNeill & Chapman, 2005, p. 57). The purpose of semi-structured interviews, according to Tuomi & Sarajärvi (2018), is most often to gather data to describe a specific theme or phenomenon. For the reasons presented, interviews were chosen as the data collection method, semi-structured interviews more specifically. Based on the information found, semi-structured interviews were defined to be the most suitable interviewing method to answer the defined research questions.

McNeill & Chapman (2005, p.19) remark that there should be a trusting relationship between the researcher and the subjects studied. This relationship enables the researcher to make true observations from subjects' lives (McNeill & Chapman, 2005, p. 19). Adams et al. (2007, p.148) indicate, that one of the key factors to be able to minimize errors and biases is to know and understand subjects' social context and motivate the subjects to

respond to the questions. In order to achieve this level of relationship, the subjects were recruited from the researcher's professional network.

3.1.1 Preparations for the data collection phase

At the beginning of this study, ten female knowledge workers working in different positions in the private, public and third sector organizations in Finland were recruited. In the end, eight interviews were conducted. This was due to unforeseeable circumstances with two recruited subjects. However, after reviewing data collected from the eight conducted interviews it was noticeable that saturation had already been reached. For this reason, it was determined that there was no need to recruit more subjects. Hence eight interviews were sufficient for the purpose of the research. According to Tuomi & Sarajärvi (2018), saturation means a situation where subjects are not giving the researcher new data and the data start to become repetitive. The subjects' ages ranged from 31 to 56 years old to cover a wide range of views, capabilities, and conditions.

Interview questions (Appendix 1.) were formulated as mostly open-ended questions or if the question was not open-ended it included an additional question to give the subject a chance to specify. Interview questions were formulated around remote working and not technostress to ensure the subjects felt like they were the experts of the discussion and it was easy for them to discuss. Interview questions were related to subjects' remote working experiences before the pandemic and during the pandemic, the typical remote workday of the subject, the attitudes in the organization towards the remote working, what subjects missed from office work, number of digital tools subjects were using, how they perceived them and whether the number of tools had increased during the pandemic. Subjects were also asked, which measures they take to recover after the workday, whether or not they had felt an increased need since the start of the pandemic to discuss work after work hours.

3.1.2 The data collection phase

The interviews were conducted during December 2021 and January 2022. A pilot interview was first conducted to test out the interview questions and see how long the

interviews would be. After the pilot interview, some interview questions were added and defined to be better understood. In the beginning, there were ten interview questions but after the pilot interview, there were thirteen. The results from the pilot interview were used in this research such as the results from other interviews. According to Tuomi & Sarajärvi (2018), the interview questions should be provided well in advance, in order to obtain as much information out of the subjects as possible. Following this advice, the interview questions were provided to the subjects approximately one week before the interview. The subjects were also asked for their informed consent, about which a form was sent to them prior to the interview. Informed consent form presented the subjects their rights and assurance that all of the collected data from the interviews would be anonymized and the subjects could not be identified from the research.

All eight interviews were conducted using the Zoom video conference application. Before the Zoom calls, the subjects were asked to take a picture of their usual remote working station. Seven of the subjects were able to send a picture from their workstation. Out of eight interviews, six of the subjects felt comfortable, or technically possible for them, to have their camera on during the interview. Therefore, it was possible to inspect six of the subjects' body language and micro-expressions during the interview. The interviews lasted from 20 to 30 minutes. The interviews were recorded using the Zoom application's recording functionality. After each interview, the recordings were transcribed using the Office365 Word online application.

3.1.3 The subjects

Eight subjects interviewed were between the ages of 31 to 56. The educational background of the subjects was equally divided between a highly educated and those who had vocational education. Exactly half of the subjects had a higher education background, bachelor's degree or higher, and half had a vocational education background. The subjects represented different kinds of households from single households to adult households with adult children not living at home. Almost half of the subjects represented a household of two adults with no children. A quarter of the subjects represented a household of two adults with children living at home. In addition, half of the subjects mentioned that they had pets in the household as well.

All eight of the subjects worked in different organizations. The organizations, in which the subjects worked, covered most of the sectors and sizes. The majority of the subjects worked in a private sector organization but a public sector and a third sector were also represented. The subjects were evenly representing all sizes of organizations from a micro-organization to a large international organization, almost half of the subjects were from a midsize organization.

3.2 Data analysis methods and phase

The process of analyzing the qualitative data, according to Ryan & Bernard (2003, p.85), requires four steps: (1) finding themes, (2) choosing the most important themes, (3) building hierarchies, and (4) linking discovered themes into a chosen theoretical framework. Ryan & Bernard (2003, p.87) define a theme as “ a fundamental concept we are trying to describe”. To follow the described analysis process thematic grouping and theory-guided content analysis were chosen as the data analysis methods for this research. Thematic grouping was chosen as a method, as it provides a good method to analyze and group large data sets and helps to categorize various data. Theory-guided content analysis was chosen as a method as it provides freedom to analyze the data as it is and gives it the main focus while drawing similarities from the theoretical frameworks.

A thematic grouping, according to Juhila (2021), is a process of organizing the collected data into themes, which will help a researcher to answer the predetermined research questions. Saldaña (2011, p.108) states that the themes' purpose is to summarize both the apparent and the underlying data. A thematic grouping can be used as a part of the content analysis process, where it takes place prior to content analysis to help organize the data (Tuomi & Sarajärvi, 2018). Juhila (2021) wrote, that the themes created during the grouping are not predefined but emerge during the grouping phase. Ryan & Bernard (2003, p.88) say that the themes are drawn from the data as well as from the theoretical frameworks studied prior to the analysis. These theory-based themes can be a theoretical definition or for example defined characteristics of the studied phenomenon (Ryan & Bernard, 2003, p.88). After recognizing the themes, they can be categorized or listed in the main themes and the sub-themes (Saldaña, 2011, p.108). According to Juhila (2021),

it should be also noted that the themes are frequently emerging concepts from all of the collected data and cannot be determined from a single interview data alone.

According to Tuomi & Sarajärvi (2019), a theory-guided analysis means an analysis method where collected data are analyzed based on its content, after which themes from theory are introduced as a guide to help the analysis and to guide the result in the right direction. As the purpose of this research was to collect experiences and analyze those, the theory-guided analysis seemed the most appropriate method of analysis. The theory-guided analysis gives room for the collected data to be examined and to be reflected or compared against the theoretical framework. According to Tuomi & Sarajärvi (2019), the meaning of the theory-guided analysis is not to test the theory but to show the meaning of the data in the analysis and to bring up new ideas when comparing the theory and the collected data. This notion of theory-guided analysis highlights the suitability of the analysis method in this research as the current research of technostress does not include enough theoretical framework about women and technostress. The theory-guided approach gives the researcher more freedom to choose how to collect the data and how to interpret the studied phenomenon (Tuomi & Sarajärvi, 2018).

Thematic grouping was done by using the Office365 Excel application. Each of the interview questions had its row, on which themes raising from the interview answers were added. Each of the interview questions and the answers were analyzed one by one, by writing down themes rising from each answer. After each answer had been analyzed the number of the same themes were calculated and the most often occurring themes were placed on the left of the row continuing so that the least occurring themes were on the right side of the row. After each of the questions was analyzed, similar themes occurring from all the questions were found. The main themes found will be discussed in chapter five.

4 EMPIRICAL FRAMEWORK

In this chapter, the collected empirical data will be reviewed and presented. The chapter will create the empirical framework for this research. The review consists of six parts, which view the data from different angles such as subjects' personal experiences, organization attitudes, digital tools, and recovery.

All of the subjects had daily remote working experience at least six months since March 2020. Most of the subjects had worked remotely nonstop since spring 2020. All of the subjects worked remotely from their homes. Three of the subjects had a separate room in their home, which they use for working only. Half of the subjects had a designated workstation, which they used daily. This workstation included for example a desk, a dock, and an additional monitor in addition to their laptops. The other half of the subjects were using only their laptops to work and worked from different locations in their homes such as over a kitchen table or a counter or from a sofa. All of the subjects' main form of working remotely is by using one or several digital applications and software to perform their tasks and to communicate with their coworkers.

Almost all of the subjects had some kind of remote working experience before the pandemic. Half of the subjects had worked remotely regularly before the pandemic, three had occasional remote working experience and one had no previous remote working experience. The subjects described that before the pandemic remote working was reserved for those days, on which they worked on tasks, which required concentration. The subjects also mention that before the pandemic they used remote working opportunity if they had a sick child or a pet at home. Other reasons why the remote working opportunity was used before the pandemic was to run errands during the workday or to give flexibility for traveling. Many of the subjects mentioned that before the pandemic remote working was seen as a perk.

4.1 Remote working experience during the pandemic

Though transferring to daily remote working came as a shock to many of the subjects, it was often mentioned how easy it was after all and how surprisingly well tasks could be

done outside of the office. Some of the subjects remarked that it took some time to adapt to daily remote working. The subjects found it especially difficult to adapt to the silence of a home office and to find the right kind of routine for remote working.

Two of the subjects also mentioned that daily remote working had changed their working rhythm. These subjects said that their workload is now much more uneven and work comes in cycles, where on some days they have barely any work and on some, they have too much work. Several of the subjects also mentioned that their workdays are now filled with meetings and they have barely any time for their "actual work" as they describe it. One of the subjects described the situation as follows: *"Before remote working was something special. You knew you could work efficiently that day and get things done. But now remote working means I sit at home alone with headphones on jumping from meeting to meeting the whole day"*.

Almost all of the subjects had enjoyed working remotely and would wish to continue working remotely at least a couple of days a week in the future. The subjects said that they enjoyed remote working because it gives them more free time due to the reasons such as not having to commute to work. What was most disliked about the remote working between the subjects was the loneliness during remote working and the feeling of being an outsider in the work community.

Most of the subjects mentioned that at the beginning of the daily remote working they felt anxiety and pressure to show their work. The subjects were unsure their organization could recognize their value and hard work when working remotely. As the knowledge workers' work is not always concrete or measurable, they felt there was pressure to leave some kind of digital proof of their work. These feelings of pressure were described by one of the subjects: *"At the beginning, there was a pressure to give an impression of working extra hard so no one would think that you were just slacking at home"*. These feelings of pressure were specially mentioned more than once by those whose organization had previously had high bureaucracy related to remote working. One of the subjects who had changed organizations after the COVID-19 pandemic started said she was experiencing these same feelings of pressure again in the new organization. She said

the situation was now even more difficult as she did not know her coworkers and was still learning about the job itself.

The same subjects, who reported their work had changed to be unevenly disturbed also reported that at the beginning they felt anxiety and guilt for this unevenness. One subject described her feelings as follows: *“There are long times when I have a lot to do and then long times when I have barely anything to do. In the beginning, I was all of a sudden lost with myself and I felt bad about it. I was on my work computer but I was not working.”* The subjects said that these feelings have eased since the start of the daily remote working thanks to the help of their coworkers and managers. They reported that discussing these issues with their coworkers and finding out that others had similar problems and that managers were okay about it helped.

When describing their usual remote working day almost half of the subjects mentioned that they check their work emails almost immediately when they wake up. Half of the subjects had some kind of daily routines, which they performed before starting their workday but the other half performed these routines while working. Many of the subjects said that their remote workday doesn't differ from their typical workday at the office. *“Typical remote workday is pretty much the same as typical workday”* as said by one of the subjects. Some of the things that were mentioned by the subjects as a new addition to workdays while working remotely are the different messaging channels, which they now have to follow more intensely.

Some of the subjects remarked that their work is now more hectic and fuller than when they worked in the office. Their calendars are filled with meetings and they have to start their day earlier to be able to get other things done before the first meeting of the day starts. For this reason, it was difficult for these subjects to have breaks during the day.

Other subjects also mentioned that having breaks was more of an effort than when working from the office. One of the subjects described the current situation in the following way: *“You have to be a lot more mindful about your breaks when you work from home. It is a lot easier to immerse yourself to work and focus on the task at hand*

when you are alone.” Some of the subjects also said it was especially difficult to take a break from their device, they said that previously breaks meant talking with someone or walking somewhere to have a cup of coffee now it meant reading an online newspaper. Lunch break, however, was something that all of the subjects seemed to value and said they never forget to have. They also remarked that they ate lunch away from their work devices.

Many of the subjects said that during remote working they are more mindful of the length of their workday. Though remote working allowed them the flexibility to combine work and home tasks many of them were keen on making sure the two domains were in balance. Many of them mentioned that they try to ensure they do not work longer than the required eight hours. *“I am very strict when it comes to the length of my workday. But it goes both ways, if I have some errands to run during my remote workday of course then I make sure to work those hours in”* as the circumstances were described by one of the subjects.

4.2 Remote working on the organizational level

The majority of the organizations, where the subjects worked, had a positive attitude towards remote working. The employees were encouraged to work remotely and there was no pressure to return to office work. However, many of the subjects said this was not the case before the pandemic. Before the pandemic, many organizations had strict rules and bureaucracy for remote work. Some of the examples the subjects gave of these were having to explain what they were going to do during the remote workday and reporting back what was accomplished during the remote workday. Some of the subjects also mentioned that there used to be different kinds of rules for different employees and these were based on what kind of attitudes and views their managers had for remote working.

Almost half of the subjects said their organization had already set rules for hybrid work in the future, which they felt was a positive thing. Those subjects, where their organizations had not set any rules, seemed to be most worried about the possibility to work remotely in the future. When the subjects talked about their organizations' attitudes many of them seemed to be worried that the attitudes would change back to what it used to be after general recommendations to work remotely are lifted. They seem to have

sensed this from what their managers had said and believed that the pressure to return to office working was rising. Almost half of the subjects mentioned that since the pandemic their organizations had downsized their office space. The subjects seemed to think this was a sign remote working possibility would continue in the future.

The organizations where the subjects worked offered a variety of support for their employees. Some of the organizations were more active in this department than others. The usual support, which the subjects mentioned was the tools for working, such as additional monitors, headphones, etc. One of the organizations offered money for their employees to use to improve their work ergonomics at home for example to purchase a desk or a chair. A couple of the organizations offered their employees the possibility to obtain additional work ergonomic products such as footrests.

The organizations also offered webinars and self-training material, which were available for a couple of the subjects. These were for example about learning to use the office applications, about time- or self-management, or generally about well-being at remote work. Some of the organizations also offered the usual technical support to ensure the applications worked correctly from home. One of the subjects mentioned at the beginning of the pandemic there was a dedicated team available to help them with any questions related to learning their new remote tools and applications.

In some of the subjects' organizations, informal activities for their employees were also organized to keep up the company spirit. For example, some had organized virtual after works like wine tasting or Christmas parties where all the employees were sent supplies for the activity beforehand. One organization had an outdoor day where all employees were encouraged to leave work things aside and go spend a day outside. These kinds of informal activities were most often offered and organized by the midsize or the large organizations.

Half of the subjects mentioned that they had got some form of personal support from their manager. This could be as simple as video calls every once in a while, or organized group virtual coffee breaks. Interestingly, this kind of personal support was something that was

most missed by the subjects. Some of the subjects had not been contacted once by their manager to ask how they were doing since the daily remote working started in spring 2020.

Many of the subjects remarked that remote working was a more personal experience than working from the office as everyone's skills, personalities, and home situations differed so much. One of the subjects was especially worried about the lack of personal support for the employees: *"I think managers should stop to discuss individually with all of their employees and see how they are actually doing. It is a fact that not everyone is doing so well by themselves and they should be offered personal support if not by the manager, then by the work psychologist."* Especially at the beginning many of the subjects would have hoped that their managers would have supported them with the transition to remote work.

The organization-level actions were also hoped for by the subjects. Many of the subjects hoped that their organizations would have offered more communal activities to help keep up the coworking spirit. Both unformal, such as virtual coffee breaks, and formal activities, meetings with cameras on, were wished. Some of the subjects also mentioned the lack of remote working rules, especially concerning the meetings made their remote workdays more difficult. They would have hopes for organization-level rules for example for the length of the meetings and meeting free times to be able to have breaks during the day and ease their workload.

4.3 Disadvantages of working remotely

Social interactions and coworkers were clear winners when discussing with the subjects what was missed most from the office work. All of the subjects said they missed social interactions and companions during their lunch breaks. Other themes, related to social interactions, rising from their answers were spontaneous interactions and sparring with their coworkers.

Most of the subjects said there was a lack of honest conversations with their coworkers and they missed the easiness of "just asking" questions from their coworkers. They felt

like the meetings were now more formal than previously, as these did not include the pre or post meeting discussions with coworkers. Many of the subjects said that the feeling of being part of a work community had suffered during the daily remote working period. These subjects mentioned it was a lot harder to know what the general atmosphere amongst the coworkers was than previously.

The discussions about work with coworkers, according to the subjects, had decreased significantly and especially the spontaneous discussions as well as complaining about work with their coworkers. As these discussions were missing it was reported by many of the subjects that dwelling on work issues had increased. Some of the subjects also reported that these discussions had now transferred from work to home. These subjects reported that they had noticed a rising need to discuss these issues with someone in person and most often it was the spouse who they discussed with. Some reported that these discussions about work were had in their free time if a spouse was not working remotely as well.

The subjects reported that they had noticed in general that they talked about work-related issues more often now during their free time. Some said they talked about work less now during their free time since their spouse was also working remotely and therefore these discussions could be had during work hours. Some of the subjects said they had noticed that now if they saw their coworkers in their free time the discussions would more often shift to work than before the pandemic. One of the subjects remarked, she felt like there was less need to talk about work in her free time, as all of the social interactions with her coworkers were missing the work did not bother her as much as before. Those subjects who said contacting their coworkers was easy and they had a trusted coworker to turn to seemed to have less need to discuss work in their free time.

Some of the subjects mentioned that they felt like the information flow had suffered during the remote working period. According to these subjects, it was a lot harder for them to know what was going on outside of their work team. Previously they had had a good sense of the general state of the organization and its many teams but now they only knew their team's matters. This seemed to be an issue in small and midsize organizations

where general information channels were lacking or not used actively. One of the subjects described the situation as follows *"We have a small organization with two teams. Before I knew in general what was going on in the organization and I was also interested in knowing. Now it is a lot harder and I feel disconnected from the organization"*. Many of the subjects also felt that, due to personnel changes, it was harder to know who was working for their organization and who were not or what coworkers' tasks nowadays were.

4.4 Remote working and digital tools

When discussing the digital tools one common application was mentioned by all of the subjects, Microsoft's Teams. For most of the subjects, the Teams was a common tool already before the pandemic but a couple of subjects said they started using it only after the daily remote working started. The subjects felt like they had been given a proper induction to use the Teams and they were comfortable using it. The Teams was utilized in a variety of different ways in the organizations. Some of the organizations used all of its functionalities, such as workgroups, chats, and document sharing, but many seemed to use it for virtual meetings and calls only. In fact, some of these subjects who said it was used for meetings only seemed a bit ashamed they did not utilize the application more.

The chat functionality of the Teams especially was used and viewed in very different ways amongst the subjects. Some of the subjects said they used it often to contact their coworkers and felt like it was easy to do so. They even had informal conversations or group chats. Then there were those subjects who did not feel comfortable using chats as a means of informal communication. They mentioned that they did not feel comfortable with the idea that their conversations would be available later on in writing and they would rather just call their coworkers. This suspicion and negative attitude towards chats can be well seen from one of the subject's answers: *"I don't feel comfortable with these digital channels because they leave a print. If I write something negative about our organization to my coworker it leaves a print forever somewhere in the cloud for anyone to see later and it can be traced back to me."*

4.5 Recovering after the remote workday

According to almost all of the subjects, the best way to recover from work was by hiding their work computer out of sight. Those subjects who had a separate home office reported that they closed the door after their workday ended and did not use the room for other purposes. One of the subjects described the distinction she had made with her home office and the rest of her home as follows: *“My home office allows me to feel like I am leaving work and stepping into a whole other environment. Just like I would leave all my things at the actual office I leave those things to my home office. When I step out of there that is when my free time starts”*.

Those subjects who did not have a separate office said they collected all of their work tools and hid them out of sight after their workday ended. They said they would much rather build their workstation every day than look at their work computer and have the work follow them in their free time. One of the subjects said she felt like the benefits of not having a permanent workstation overruled having a workstation: *“Overall I always try to hide my work stuff after I finish. I do not want to have a desk in my living room although I know that for work ergonomic it would be smarter. But I do not want to have a desk there in the middle of my apartment to remind me of work constantly. Out of sight out of mind”*. For those subjects who were not able to hide their work station, for example, it was located in their living room or bedroom, said it was especially difficult to recover from work. One of them reported that when she had her workstation in her bedroom it disturbed her sleep.

The subjects had also found other ways to recover from work. The second most often mentioned was regular exercise and spending time outdoors regularly. Making sure to not work overtime was also mentioned by many of the subjects. Children and taking care of them or their activities were mentioned as a guarantee to forget about work in their free time. While many of the subjects said they were taking care of housework during their workday they also mentioned these as something to help them to recover. Overall, the subjects agreed that just simply keeping work time for work and free time for free time and having something to look forward to or waiting for them after the workday was one of the best ways to recover from work.

4.6 Conclusions

In conclusion, the general agreement between the subjects about remote working was that they enjoyed the freedom and flexibility remote working had given them. Working remotely was seen as an enormous benefit, which had helped the subjects to avoid getting infected by the COVID-19. The subjects hoped that the possibility to work remotely would continue in the future even though they would not wish to work remotely daily. The subjects were worried about many issues, such as their and their coworkers' physical and mental health. Some of the subjects feared that the risk of burnout was greater in remote working than in office working as it was a lot more difficult to obtain personal help and the lack of social interactions meant they had to ponder about the issues more by themselves.

5 ANALYSIS AND INTERPRETATION OF RESULTS

In this chapter, we will analyze the presented empirical framework. When analyzing the data collected from the interviews recurring themes could be identified. These most recurring themes from the data are presented in this chapter and interpretations of the found themes and other findings will be made.

During the analysis, themes were found, which indicate that remote working has been a positive experience for most of the subjects. Such words as effectiveness, productivity, enjoyment, and flexibility were often associated with remote working and remote working experience by the subjects. The themes were found, which indicate that remote working is lacking and has been a negative experience for some of the subjects. The themes such as meeting overload, message flood, loneliness, lack of social interactions, and lack of personal support. The last group of themes identified had to do with how remote working had changed the nature of work or how the subjects had to act differently now compared to the previous situation. These themes were cyclic and uneven workload, need for mindfulness, and association of work to concrete objects.

Remote working has been, in the overall picture, enjoyed experience by the subjects, which has offered flexibility to organize life and help to prevent from being infected by the COVID-19. These had eased some of the stress related to the pandemic and decreased time-related stress for those having to combine work and family lives. Remote working has also offered the subjects a new effective and productive way of working, limiting the usual office working interruptions and interferences. The subjects had enjoyed remote working so much that all of them wished to incorporate remote working regularly in their workweek in the future.

However, there were negatives as well. Many subjects felt like they had not received enough support from their organizations during the remote working period. They also reported feelings of being disconnected from their work communities. The subjects felt like they were not kept in the loop of communication and were unaware of what was going on in the organization. The subjects especially hoped to be better informed about what was going on outside their work teams.

Lack of social interactions was also mentioned by several subjects as a negative aspect of remote work. Loneliness could be detected especially from those subjects who lived alone. Subjects most missed the face-to-face meeting with their coworkers from office working and informal meetups during the workday such as lunch companion. They also felt that unofficial small talk with coworkers and the chance to exchange ideas spontaneously were an important part of working, which now was missing. Most of the subjects seemed to feel like the lack of these social interactions had hindered their work. The younger subjects used chats to fill this gap and the older subjects said that they often called their coworkers.

Though, remote working had become a regular way of working it had also disrupted the ways of working. As reported by subjects for many remote working had meant work day was full of meetings, so much so that it made it difficult for them to get anything else done during their workday. Some of the subjects also reported that their work had become more cyclic, meaning that at times there was an overload of work and at times there was so little work they felt redundant.

Subjects had also found that they needed to be more mindful during their workday. This was to ensure that they take enough breaks or that they do not dwell on tasks too long. This reported mindfulness or need for mindfulness seems to indicate that the subjects are aware of the need to maintain their mental well-being while working remotely. Mental well-being was something that the subjects seemed to be worried about. Many of the subjects mentioned that they were worried about their coworkers' well-being and that their organizations had not offered enough personal support. They also agreed that remote working was a very personal experience where there are no two alike.

The results show that work is associated by the subjects with objects or a room at home. This means that the subjects feel that when they see a specific object like their work device they start to think about work. Or when they are in their home office, they are in work mode, and stepping out of that physical place means they switch off the work mode. The subjects had found that they could best mitigate the stress caused by work by keeping

these objects or rooms out of sight as many of them reported that they hid their work device after their workday or kept their home office's door closed.

The interviewed women seem to have a good balance between work and family domains and they felt like they had found ways for these domains to balance each other. Such a way for example is keeping things associated with work out of sight. Their organizations also seemed to have given them the flexibility to organize their own ways of working, which in return had helped to keep the balance between the domains.

Especially at the beginning of the remote working period most of the subjects seemed to be experiencing techno-insecurity and techno-uncertainty. This interpretation was made from the subjects' indication of feeling anxiety and pressure to show their work and being unsure their organization could see how hard they worked. However, as the subjects reported these feelings did not last very long, which could indicate that their confidence grew over the remote working period. Techno-uncertainty was also detected on those subjects, who reported that their work had become cyclic and uneven. They seemed uncertain about this new trend and were wary of whether they would be needed in the long run.

Techno-overload was evident especially thorough the overload of virtual meetings, which made subjects feel like there was not enough time to do all their work or that they had to extend their workday to be able to do their work. Techno-invasion was also detected from the data as the subjects expressed the flood of virtual communication, which interrupted their workflow and required mindfulness to keep their concentration at a needed task. When work is primarily done at home it is also evident it invades one's home domain.

The findings indicate that those subjects, who suffered from techno-overload were likely to look for another job or had done so during the COVID-19 pandemic. Many of those subjects' answers indicated that they felt like they were not supported enough by their organizations during the pandemic, which had lowered their job satisfaction and encouraged them to find or start to look for other work opportunities

An interesting finding was made with the older subjects. These subjects had very skeptical attitudes towards chats and digital forms of communication. This could indicate techno-uncertainty on their part. Here, age seemed to be the main indicator as these subjects had very different kinds of educational backgrounds, which did not mitigate these technostrains on the subjects. The older subjects also showed techno-insecurity concerning their use of digital tools. These subjects seemed to feel ashamed of not knowing how to use all the functions of the Teams and not utilizing it as much as they could. To this techno-stressor though the educational background and computer confidence mitigated this stressor as those older subjects with higher education did not report similar feelings.

As the subjects reported their main coping mechanisms were mainly reactive and included talking about their problems or distancing from the problems. Only a few of the subjects mentioned proactive coping mechanisms. Those who did, mention that they tried learning new ways to adapt their work better fit to remote work. This would indicate that they used IT control coping mechanisms. Some of the subjects indicated that they wished their organization would provide coping mechanisms such as agreeing on rules for meetings and meeting free times in a calendar. This did not seem to be something they had control over so they could not proactively do it themselves but understood that it was a way to mitigate the stress and help to cope in remote work. These kinds of mechanisms could be viewed as IT control coping mechanisms.

As the subjects mostly had very positive attitudes towards remote working and felt enjoyment during remote working it could also be seen as a coping mechanism, which mitigates risks of stress. These positive interpretations were mentioned by most of the subjects. Subjects though did not seem to view this as a coping mechanism. Therefore, it is possible that this is something they have started to develop over time and they are now experiencing techno-eustress instead of technostress.

As mentioned by the subjects the most common support offered by their organizations were training and technical support. Organizations also offered a variety of other kinds of support such as informal after-work activities. Communication was also mentioned by

a couple of the subjects but many of the subjects felt like there was not enough communication on their organization's part. This seemed to be especially a problem in smaller organizations, which as mentioned did not have active communication channels.

The subjects also indicated that having social support whether at home or work was an important way to alleviate experiences of stress. Especially discussing their situations and feelings about remote working made them realize they were not alone in the situation and that their feelings were valid. They could also receive reassurance from their coworkers or managers that their remote working methods were appropriate and that they were valued employees.

6 DISCUSSION

As previous research has found the COVID-19 pandemic has posed a very special environment for work. Remote working has become the standard form of working for around two years now. The subjects of this study had been working remotely for over 18 months when they were interviewed. It could be said that at this point they had become experts at it. The subjects had adapted well to this new form of daily work. Their reflections on remote working were similarly to Jacks' (2021) remarks, as subjects viewed remote working after almost two years as "just" work

6.1 Remote working conditions and skills

When comparing the results to the revised EWL Scale in Figure 06. we can find that the subjects seem to have good remote working conditions and experiences. The subjects indicated that they felt like they were more productive when working from home and that they could better handle the interruptions and could concentrate better. Which would indicate that their remote working had improved their effectiveness and productivity.

From the organizational trust point of view, high hierarchy related to remote working hindered their remote working conditions and made them feel more anxious about showing their work. In those organizations, where attitudes were opposite, the subjects were more confident and had shaken off the anxiousness to show their work faster. Many of the organizations provided the subjects training to manage remote working and offered work tools to improve their working facilities. These factors were appreciated by the subjects and they felt like these factors had made their remote working smoother.

Flexibility was mentioned by the subjects in many different contexts, which were similar to EWL Scale. The subjects felt like they had been given control to customize their work to better suit their needs in the remote working environment. None of the subjects mentioned that they did not have control over how they conducted their work. The subjects also appreciated that they were able to combine work and home tasks and were able to run errands during their workday if needed and work those hours later in the day.

When considering work-life balance through EWL Scale we further confirm that the subjects have a good balance between work and family domains. None of the subjects indicated that work interfered with their private lives. The subjects were also very firm on making sure to keep their workday at eight hours and not to extend it if not necessary. As they enjoyed working remotely, they also seemed to be happy about the balance it had brought them.

However, the subjects reported that remote working had affected their professional social life and that it was a lot harder to maintain an informal relationship with coworkers. This lack of social interactions had led to some subjects dwelling on work issues more than previously and talking about work during their free time. Some of the subjects also felt that remote working demanded them a lot more due to the changing nature of their work task. Overall, these aspects did not seem to affect the subjects' overall view on their work-family balance.

6.2 Remote working experience

The findings of the subjects' remote working experience were very similar to the findings in Carillo et al.'s (2020) study. Just like in their study the subjects also indicated that the main obstacle for adjustment to remote working is the lack of social interactions. As reported the subjects indicated that lack of social interactions had hindered their working and they were most missing these from office working. As most of the subjects had previous remote working experience to some extent and they seemed to have positive attitudes towards remote working it supports the findings by Carillo et al. (2020) that previous remote working experience helps adjustment to remote work.

Technical difficulties in remote working were also an indication of stress during remote work. This supports Gabr et al.'s (2021) findings of poor network quality being an indication of technostress. Though the majority of subjects had not encountered these kinds of issues those who did, mentioned that it created momentary stress. These findings also support Anderson & Kelliher's (2020) findings that the inability to find suitable

working space at home, lack of needed equipment, and having to be responsible for the reliability of the internet connection were stressors in remote work.

6.3 Impacts of gender on remote working experience

Though technical difficulties were a stressor on some of the subjects. The findings did not support the claims made in the previous research (Gabr et al., 2021; Ragu-Nathan et al., 2008; Spagnoli et al., 2020) that women are less likely to use ICTs, have less confidence in using the ICTs, and are more prone to have anxiety and fear towards them. The subjects, at the most part, seemed to be very comfortable with their work being more digital and the use of the ICTs was not one of the problems of remote work. The problems or weaknesses of remote working had more to do with how work was organized and how digital tools were used.

The subjects' answers also seem to support Çoban's (2022) findings, that women prefer remote working because it creates flexibility to combine work and family lives. Anderson & Kelliher (2020) indicated that due to the remote working being forced on the employees they feel less of the psychological benefits such as a sense of autonomy when working remotely. This could not be detected in this study's findings. The subjects seemed to feel very in control of their remote work, they felt like they were able to modify their remote working to their needs and that it gives them flexibility.

As predicted Finnish daycare system seems to mitigate the findings by Sullivan & Lewis (2001) that women view remote working as the only option for women to combine work and family lives. Before the pandemic, remote working had been a tool for the subjects to combine work and family but it was not the only option. Those who had smaller children were in daycare or school during the subjects' workdays. Sullivan & Lewis (2000) further claimed that women chose to work remotely due to domestic reasons. This could not be supported by the findings of this study. The subjects told that before the pandemic they chose to work remotely especially in those situations when they needed to finish work tasks that required concentration. Domestic reasons were also mentioned but not by the majority of the subjects.

In the studies by Sullivan & Lewis (2001) and Craig & Churchill (2020) women were found to often multitask during remote work. Similar findings were made amongst the subjects as well, as they reported that they often multitask with their domestic and work tasks during their remote workday. The subjects indicated that remote working had given them more free time and made arranging life a lot easier, which is a similar finding to Craig and Churchill's (2020) finding of decreased time-related stress during remote work.

The findings of this study do not support the previous findings (Craig & Churchill, 2020; Gabir et al., 2021) about increased work-family conflict on women during remote work. Though the majority of the subjects did not have small children, who are risk group of this, those who did, did not indicate such experiences. The findings further do not support the findings by Gabr et al. (2021) that women have more domestic responsibilities or Çoban's (2022) argument that the stereotypical domestic roles have been reinforced during the pandemic. None of the subjects indicated nor did they emphasize their domestic roles or responsibilities in other ways than multitasking housework during their workday. Neither did the subjects indicate that they felt like remote working during the pandemic had distanced them from their career and professional identities as claimed by Çoban (2022).

6.4 Remote working and technostress

The findings support the findings made in the other recent research (La Torre et al., 2020; Molino et al., 2020) about technostress in remote work. In those research, they had found that techno-overload and techno-invasion had increased during remote work. To many of the subjects, the digital communication applications were the source of these technostressors either in a form of meetings or constant messages. This finding supports the findings made in the study by Oksanen et al. (2021) about digital communication applications increasing the likelihood of technostress, as this could also be detected from the subjects' answers. The findings did not support the previous research (Marchiori et al., 2018; Spagnoli et al., 2020) claiming that women are likely to experience techno-complexity and techno-uncertainty. Though the subjects had also experienced techno-insecurity and techno-uncertainty at the beginning of the remote work, these experiences

had eased after some time. This also supports Carillo et al. (2020) claim that time is the best tool to adapt to changes and mitigate stressors.

The findings also support Leung & Zhang's (2017) & Oksanen et al. (2021) findings of the intensity of remote work. They had found that the more intense remote working is the more likely remote workers are to suffer from technostress. Especially those of the subjects whose remote workday was very full and intense showed signs of technostrains such as anxiety and fatigue. They also indicated that they felt inefficient because of the intensity of their remote work.

In Figure 04. techno-stressors were predicted to have negative effects on IT-enabled productivity and job satisfaction. Though the findings could not be made about productivity it is clear that remote working and techno-stressors had affected the job satisfaction of the subjects. This finding supports the findings by Ragu-Nathan et al. (2008). Those subjects who did not show signs of techno-stress seemed to be more satisfied with working remotely than those who did show signs of technostress.

The decreased job satisfaction had affected the subjects such as Ragu-Nathan et al. (2008) predicted. The findings of this study support the claim by Ragu-Nathan et al. (2008) that techno-stressors and decreased job satisfaction affect continuance commitment. As found, those of the subjects, who had experienced techno-overload and techno-invasion the most during their remote working had also changed their employer during the pandemic. Many of the subjects also indicated that they were looking for a new job at the time of the interview. This would support Anderson & Kelliher's (2020) findings that employees are not as committed to their organization when forced to work remotely as they would be when choosing to work remotely. This could be due to their remote working conditions or organizational attitudes and culture. As continuance commitment was not the focus of this study more precise answers cannot be given.

6.5 Coping and mitigation of technostress

When considering the coping mechanisms used by the subjects the findings support Carlotto's (2011) findings that women tend to use reactive and emotion-based coping

mechanisms to mitigate technostress. The subjects especially mentioned distress venting and distance from IT as their main ways to mitigate their technostress. Several of them also mentioned that they tried to learn time- and self-management skills and tried different ways to modify their work to better suit remote work. These indicate that some actively also practiced proactive coping mechanisms such as IT control and more specifically perceived capability. The majority of the subjects also had a positive attitude towards remote work, which indicates a positive reinterpretation coping mechanism was also used.

In Figure 04. it was predicted that coping mechanisms would mitigate the effects of techno-stressors on IT-enabled productivity. The findings of this study could not find the effects of reactive coping mechanisms on productivity. However, the findings do show that proactive mechanisms do seem to have a positive effect on productivity. Especially IT control measures seem to increase the productivity of the subjects. The findings of this study seem to indicate that coping mechanisms could also have a positive effect on job satisfaction, which had not been noted in previous research. Especially positive reinterpretation and perceived autonomy seemed to indicate that the subject had a high job satisfaction rate.

The supportive atmosphere, just like Gabir et al. (2021) had found, seemed to indicate in the results that the subjects were more likely to like remote working and it indicated better adjustment to remote work, which mitigated other risk factors for technostress such as age. For example, the older subjects who had lower education had received technical support or training from their organizations had adjusted to remote working well, and felt like they were able to handle the stressors better. Hence, this had mitigated especially techno-complexity on the older subjects, which Gabir et al. (2020) had found to be a significant stressor with older employees. Supportive atmosphere indicated that the organization offered some forms of techno inhibitors to their employees.

As pointed out by Jacks (2021) remote working during the COVID-19 pandemic is a shared experience that everyone experiences differently. Though there were similarities in the subjects' answers they all represented a unique point of view and had different

kinds of circumstances. The subjects felt like this had not been understood well enough in the organizations and the wrong kind of support was offered. The answers gathered from the subjects support the views made in the reviewed literature (Carillo et al., 2020; Molino et al., 2020; Ringlea et al., 2021) that in remote working personal support is needed and psychological counseling should be available.

As suggested by Molino et al. (2020) managers play a crucial role in mitigating the occurrence of technostress during the COVID-19 pandemic the findings of this study also found this to be true. The findings indicate that there was not enough managerial support offered to the subjects. Some managers had neglected their responsibilities for their employees altogether and had not contacted them during the whole remote working period.

6.6 Key findings and recommendations

The findings provided answers to all of the research questions of this study. When considering the RQ1 “Which conditions and factors lead to technostress in female knowledge workers when they work remotely?” there were clear indications that high bureaucracy was the main indicator of the increased likelihood of remote work. In those organizations where bureaucracy was high there usually was a need for an employee to prove their work, which increased anxiety on employees and the feelings of techno-insecurity and techno-uncertainty in remote work. This was due to employees being unsure they could prove their work. The uneven workload in remote working was also an indicator of the increased likelihood of technostress and increased techno-uncertainty. Workday full of meetings and message floods from different channels also indicated experiences of techno-overload and techno-invasion. Seeing the reminders of work, such as work devices or office, increased the likelihood of experiencing techno-invasion. Lack of computer confidence indicated the increased likelihood to experience techno-insecurity and techno-uncertainty. The lack of interruption, such as technical difficulty, in working conditions, was also a momentary technostress creator.

The findings indicated to the RQ2 “How do female knowledge workers cope with technostress?” that the female knowledge workers tend to rely on reactive coping

mechanisms such as distress venting and distancing from IT. Proactive coping mechanisms such as positive interpretation and IT controls were also detected.

When considering the RQ3 “Which measures do female knowledge workers take to prevent technostress?” several different kinds of prevention methods were used. Time- and self-management tools were mentioned as a way to understand remote working better and to modify work to better fit remote working. Flexibility was an important prevention tool. Keeping those factors, which are associated with work was also an important way to prevent techno-invasion. Social interactions and discussing the situation with coworkers also had an important role in preventing technostress.

The findings support the suggestions made by Molino et al. (2020) and Oksanen et al. (2021) that organizations should increase employees' technical skills, recognize employees' differences, provide targeted support mechanisms, help their employees to maintain work in working hours, and promote ways to ensure well-being at work such as mindfulness. Therefore, it is recommended that organizations take these measures to mitigate the risks of technostress on their employees. Furthermore, it is recommended that managers should pay more attention to their employees and offer them more personal support. Further, it is recommended that organizations should keep the hierarchy for remote working low and offer their employees, flexible working models, to combine remote and office working throughout the workweek. Organizations should also not forget to listen to their employees when making these decisions.

7 CONCLUSIONS

This study researched the concepts of technostress and remote work. It can be concluded that remote working has many factors, which are favorable to technostress. Techno-overload and techno-invasion especially seem to be the main techno-stressors during remote work. However, technostress can be mitigated by organizations taking an active role in offering a wide range of support. Especially personal support is important to ensure the well-being of the employees.

Through the research, we were able to find answers to the research questions on the factors leading to technostress on women such as high hierarchy, meeting overload, low organizational support system, and interference in working conditions. We also found that women find emotional reactive coping mechanisms to be most useful for coping with technostress and try to prevent technostress by improving their skills and adapting their work to better suit the current work environment. The hypothesis of women being more prone to technostress due to their domestic metawork was supported by the literature but not by the findings.

Overall, the subjects had well-adjusted to work remotely and to the daily remote working and they wished to continue working remotely at least for some part of their workweek. During the COVID-19 pandemic enforced daily remote working the subjects have been exposed to especially techno-overload and techno-invasion. The findings also support the claim that women tend to use reactive coping mechanisms to cope with techno-stressors. The subjects had found a good balance between work and home domains and had overall enjoyed their remote working experience. This is further supported by the conformity of their experiences with the EWL Scale. The data also supports that techno inhibitors are important for ensuring a good remote working experience and preventing technostress.

7.1 Reliability and validity

As the subject sample was narrow it is difficult to examine the reliability and validity of these findings. It should also be considered that the purpose of this research was to collect

experiences using qualitative methods to gain more insight into the technostress phenomenon in the remote working environment. For this reason, the results are reliable and valid to the point that these widely explore the experiences of the subjects. Reliability and validity are also supported by the fact that it was possible to find similarities with other research. The research was conducted using good scientific manners and the process has been openly reviewed in the chapters. These manners also support the reliability and validity of this research.

7.2 Limitations

The sample of this research was quite narrow and presented subjects in various age groups and households. Therefore, it is difficult to determine, which are the factors, which cause technostress solely on women, and which are affected by the living situations of the subjects. As it was found by Spagnoli et al. (2021) organizational rules and policies affect employees suffering from technostress. In this study, all the subjects were also working for different organizations. Hence, it was not possible to examine whether or not organizational policies affected subjects without having other subjects from the same organization.

Subjects of this study had been working remotely for over 18 months and had found their coping mechanisms. As time has passed it is possible that many of them are not suffering from distress anymore but it has evolved to eustress. As this was not the focus of the study it was ignored in the analysis.

7.3 Future research

In the future, more research is needed on the effects of daily remote working on employees' mental health. More longitudinal studies and diary-based studies are needed on the effects of daily remote working on knowledge workers. As the subjects of this study had already been working remotely for over 18 months they had already gotten used to working remotely and created coping mechanisms. Therefore, research focusing

on techno eustress in daily remote working could be a beneficial addition to technostress and remote working research.

Special focuses could be on employees in different kinds of households. As it was found in this research single people seemed to suffer more from technostress due to social isolation. However, this observation should be verified in future studies and possibly by doing a cross-sectional study within one organization. Relation between technostress and social isolation could also be studied further.

Other factors resulting in technostress should also be researched more. It would also be interesting to learn how much influence does IT system design has on the creation of technostress. As IT systems and their logic are more often designed by men it would be especially interesting to learn if these affect women suffering more technostress than men.

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APPENDICES

Appendix 1 Interview questions

1. Tell about yourself, your age, household, job history and about your current job? (Kerro itsestäsi, ikä, elämäntilanne ja kuvaus taloudestasi, työhistoria ja nykyisestä työtehtävästäsi?)
2. Have you worked remotely before the pandemic? If yes, tell about your remote working experiences before the pandemic? (Oletko työskennellyt etänä ennen pandemiaa? Jos kyllä, kerro etätyökokemuksistasi ennen pandemiaa?)
3. Tell about your remote working experience during the pandemic? Have your attitudes towards remote working changed after the pandemic? (Kerro etätyökokemuksistasi pandemian aikana? Onko suhtautumisesi etätyöhön muuttunut pandemian myötä?)
4. Tell about your typical remote workday? (Kerro tyypillisestä etätyöpäivästäsi?)
5. Tell about how remote working has been perceived in your organization? (Kerro kuinka etätyöhön on suhtauduttu organisaatiossasi?)
6. What kind of support has your organization offered for remote working? (Millaista tukea etätyöskentelyyn on tarjottu organisaatiosi taholta?)
7. Has remote working changed your ways of working? If yes, how has it changed? (Onko etätyö muuttanut työskentelyäsi? Jos kyllä, kerro miten?)
8. What do you miss most from office work? (Mitä kaipaavat eniten toimistotyössä?)
9. How many digital tools do you use while working and how do you perceive these tools? (Montako digitaalista työkalua käytät työssäsi ja miten näet nämä työkalut?)
10. Has the number of digital tools increased during the pandemic? If yes, tell about the process how these tools were introduced in your organization? (Onko digitaalisten työkalujen määrä lisääntynyt pandemian aikana? Jos kyllä, kerro näiden työkalujen käyttöönotosta organisaatiossasi?)
11. How do you recover after the workday? (Miten pidät huolen palautumisesta työpäivän jälkeen?)
12. Have you noticed a need to talk about work more often after workhours after daily remote work? (Onko töistä puhuminen kotona/ töiden jälkeen lisääntynyt etätyössä?)
13. Anything else you would like to tell about your daily remote working experience? (Muuta mitä haluaisit kertoa etätyökokemuksestasi?)