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WORKING FROM HOME: THE RELATIONSHIP BETWEEN WORK ENVIRONMENT AND EMPLOYEES' SELF-LEADERSHIP ON THE EXAMPLE OF ICT-ENABLED WORK

Master's thesis

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I have written this Master's thesis independently. Any ideas or data taken from other authors or other sources have been fully referenced.

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Introduction

Working from home (WfH) is a work arrangement in which employees do not need to work in a central place (e.g., office building, warehouse, or store) (Bao et al., 2021). In essence, it is a form of employment where work tasks are performed in employee´s place of residence and using information and communication technologies (ICT). Also called remote work, telework, home office, or telecommuting, the topic has gained enormous interest, especially due to the rise of technological capabilities and the learnings from the global pandemic Covid-19.

Historically, WfH has been considered a flexible form of working where employees and employers agree on the means and time when employees can work from home. The benefits of working from home are its flexibility in terms of saving time on commuting, the convenience of choosing a time for breaks, a relaxed environment, and more time for personal life - moreover, substantial growth in employees' productivity, satisfaction, and less tiredness from work. Employers may benefit from WfH by decreasing attrition rates, decreasing costs to train new employees, and saving office costs (Bloom et al., 2015). On the other hand, the need and benefit of allowing working from home full or part-time have been questioned by some studies, implying that the home environment doesn't create a relevant mentality for working, has distractions, and has a negative psychological impact on employees. A study conducted by Mann and Holdsworth (2003) indicates that teleworkers experience negative emotions of loneliness, irritability, worry, guilt, feelings of social isolation, and mental ill-health more than office workers.

In March 2020, when the global pandemic Covid-19 hit the world, the majority of office workers were forced to work from home. Recent studies on the topic of working from home have mainly been emphasizing the impact of the pandemic, which not only caused people to work from home but also eliminated all physical and social interactions, possibilities to attend hobbies, and many other aspects of people's lives. In addition to change of workplace, the impact on employees' productivity, mental and physical health, work-life balance, and engagement with work tasks have been questioned more than ever. A field study by Barrero, Bloom, and Davis (2021) conducted as a form of survey during Covid-19 declares that working from home will stick due to the learnings from the pandemic. It is expected that almost 20% of Americans will continue working from home post-pandemic, which is four times more than before Covid-19 (Barrero et al., 2021). These learnings give indication to further analyse the home-based work environment and the way individuals manages themselves.

Regardless of the work location, the work environment available for employees can be broadly divided into three dimensions: physical environment – the workspace and its´ ergonomics, the virtual environment covering hardware and software, and lastly the social environment that comprises organizational routines, habits, management, and autonomy (Palvalin et al., 2017). The work environment available for employees in their home introduces different advantages and disadvantages compared to what is available in employers premises.

While discussing the WfH concept, it because evident that with the decrease of external guidance, self-leadership processes start to play a significant role in employees' ability to work and manage oneself. Self-management, often referred to as self-control, means that employees set and manage personal goals, evaluate their behavior, and take responsibility for decisions they make without external control (Manz et al., 1980). Later, Manz adjusted the theory by introducing self-leadership and defined it as a self-influence perspective where a person leads oneself toward the performance of naturally motivating tasks but also to do the work that must be done (Manz, 1986). In essence, it is a set of skills that individuals can observe and develop to control and motivate oneself to perform work tasks efficiently.

With the increase of information and communication technologies (ICT) involved jobs and the experience from past two years, when people worldwide have been practicing working from home, it becomes relevant to study their views on working from home arrangements, their emotions, and evaluation on self-leadership skills in a more focused approach. This Master's thesis aims to describe the relationship between self-leadership and work environment, concentrating on employees reliant on information and communication technologies, and explicitly working from home.

The following objectives have been set for the research:

- to analyze the main perceptions and definitions of working from home concept
- to analyze self-leadership definition, features, and outcomes
- to create and conduct an explorative study about WfH
- to explore and describe the relationship between the home-based work environment and self-leadership skills while executing ICT-enabled work
- to set conclusions on relationships and propose recommendations on how to better engage in self-leadership and work environment capabilities

The first part of the thesis concentrates on the WfH definition, advantages and disadvantages, describes the home-based work environment dimensions, and is mainly based on the journal by Palvalin (2017) assessing the work environments impact. To elaborate on the prerequisites and limitations of WFH, the author will incorporate research by Dingel and Neimann (2020) and Vargas-Llave (2020) into the framework to understand the occupations that can be thrived from home. The latter part of the first chapter incorporates self-leadership theories by Mezo (2008), Houghton and Neck (2012), elaborating on self-leadership strategies and assessment scales. Elaborates on the internal and external features and outcome of successful self-leadership (Goldsby et al., 2021) and the impact of workplaces and self-leadership practices (Palvalin et al., 2017).

In the second part of the paper, the author will conduct exploratory research using diary study to find and explain the relationship between work environment and self-leadership, targeting employees using information and communication technologies and working mainly from home. The research will include weekly self-assessment by the selected sample over one month, which enables the author to collect timely data from employees. It is expected to give the most up-to-date overview on self-leadership and work environment in relation to executing home-based ICT-enabled work. To be acknowledged that the research will be executed amongst office workers in one company hence the result cannot be generalized.

Keywords: working from home, telework, work environment, self-leadership, ICT-enabled work.

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1. Theoretical framework on working from home and self-leadership
1.1. Working from home definition and related theory on work environment relevant to ICT-enabled work

The global pandemic Covid-19 has shown that the labor market can be heavily disrupted within a couple of months by shifting employees from classical office environment to home office and introducing different challenges to perform work tasks efficiently. In this chapter, the author will give an overview of the working from home (WfH) definition, home-based work environment drivers, advantages and disadvantages based on recent studies and theory in this field, concentrating on ICT-enabled work.

Working from home has various synonyms such as telework, telecommuting, mobile work, and remote job. Depending on the context and emphasis, these terms are used differently from study to study. For example, working from home has become more apparent in recent research related to the Covid-19 impact since the phrase refers to a home environment, in contrast, a telework indicates working elsewhere than on the employer's premises. WfH synonyms are derived from the first documented project on telecommuting by Jack Nilles in 1973, where the terms telecommuting and telework were defined (Messenger, 2019). Telecommuting is periodic work out of a permanent office, one or more days a week, either at home or any other location, reducing commuting time to and from the workplace, whereas telework is any form of replacement of information technologies for work-related traveling (Nilles, 1975). In his later publications, Nilles uses the term telework to summarize different activities around the concept of working away from the employer's premises and using ICT (Nilles, 1988). ICT refers to technologies that provide access to information through telecommunication and focuses on communication technologies (Ratheeswari, 2018). European Framework Agreement on Telework (2002) has defined the term "Telework is a form of organizing and/or performing work, using information technology, in the context of an employment contract/relationship, where work, which could also be performed at the employers' premises, is carried out away from those premises on a regular basis". To summarize, the definitions concentrate on two main aspects: the change of location and the usage of ICT. Eurofound research has defined such form of employment as telework and ICT-based mobile work (TICTM), and divided into four categories based on mobility, use of ICT, and employment status (Messenger et al., 2017). Among those categories regular home-based TICTM has been introduced and described as work arrangement where employee mainly works from home with high intensity of ICT use. The scope of this Master´s thesis concentrates on working from home, meaning de-localization of work tasks to be performed in employees´ place of residence and using ICT, or in short home-based ICT-enabled work.

WfH introduces a certain work environment for the employee that may bring benefits or consequences to employees´ performance, social life, or general well-being. The work environment, regardless of its location, could be broadly divided into physical and non-physical, where physical environment refers to workspace, its ergonomic features, and atmosphere that would enable concentration, collaboration, and efficient working. The non-physical environment includes of hardware and software used to execute work tasks, organizational culture, management, information flow, and well-being generated by the surrounding environments. Palvalin (2017) divided the work environment into three

dimensions: the physical environment, namely facilities and workspace, the virtual environment includes technology used for working, and the social environment combines managerial and organizational aspects like transparency, clear goals and policies, and good information flow. Table 1 summarizes the most important home-based work environment drivers, advantages, and disadvantages.

Table 1

Home-based work environment drivers, advantages and disadvantages

WE	Drivers	Advantages	Disadvantages
Physical environment	• Space to do different tasks, e.g., meetings, concentration • Low number of distractions • Workspace ergonomics, e.g., quality furniture • Air quality • Lighting	• More flexibility • Work-life balance • Less stress • Less commuting • Savings in time and money • Comfortable environment • Better concertation • More autonomy • Increased productivity	• Physical distress • Technostress • Communication difficulties • Less information • High need for self-leadership • Work-life balance • Social isolation • Decreased productivity • Presenteeism • Career progression
Virtual environment	• Quality hardware, e.g., computer, additional monitors, headset • Software for communication and collaboration, e.g., electronic teamwork tools • Access to information • Connectivity, e.g., Internet quality		
Social environment	• Autonomy • Clear goals and policies • Organizational habits, e.g., meeting practices • Support from colleagues and management		

Note: WE – Work environment dimension

Source: Created by the author, based (Aczel et al., 2021; Bao et al., 2021; Barrero et al., 2021; Mann & Holdsworth, 2003; Palvalin, 2017; Palvalin et al., 2015; Ratz et al., 2021; Vargas-Llave et al., 2020)

A good work environment should offer capabilities to optimally organize one's work activities and allow formal and informal communication, concentration, and ergonomic features. While such capabilities are usually available on the employer's premises, it's not always possible at home environment. In the WfH context, the physical environment

available is employees' personal home, which may offer better features and comfort for some workers but could also negatively impact physical and mental well-being. The main advantages of WfH are its´ flexibility in terms of time usage and managing family or other household responsibilities contributing to good work-life balance and less stress. While WfH gives great opportunities to manage family life, those living alone may feel social isolation, loneliness, and more stress. Still, a commonly occurring factor that negatively affects a person in the physical environment is distractions that can occur from the discomfort of the workspace and external factors such as other family members who might also work from home, children, pets, or noises caused by neighbors. Additionally, it is reported that home-based workers find it difficult to switch off from work and working beyond formal working hours (Aczel et al., 2021).

Since the post-pandemic work arrangements are still to be concluded, many companies haven't revisited their policies regarding office equipment usage. Acquiring quality equipment for home office use may be quite burdensome for employees. It is questioned whether companies should, to some extent, cover the home office equipment expenses for employees or provide good equipment as essentially companies can reduce their expenses on office spaces and equipment as workers shift to home office, some positive implications toward employees are learned from recent surveys (Miller, 2020). In the long-term, lack of physical environment capabilities may result in causing problems with physical health or mental distress, as a result impacting workers' performance. Often, employees don't have dedicated space for work at home, and common areas like a kitchen table or couch are used instead, which may not offer expected support. After the first wave of Covid-19, the preliminary evaluation of home office ergonomics revealed several concerns related to posture (Davis et al., 2020). For example, usage of a chair with no possibility to adjust the height or without an armrest could lead to poor head position, elevated arms, or upper back pain, and not using the back of the chair, which may lead to lower back pain. Likewise, the monitor's height and position were too low, high, or not centered relative to the person's eye height, causing twisting of the neck.

To perform ICT-enabled work at home, the virtual environment capabilities are crucial elements to meet the requirements to efficiently perform work tasks. Proper hardware provided by the company or purchased by the employee, such as a laptop, mobile phone, or other equipment, should provide smooth operation between work tasks. Software, communication and collaboration in specific, allow real-time access to information such as policies, regulations, documentation, or instructions as well as immediate communication

with colleagues or other stakeholders. While these virtual environment capabilities are utilized to enhance the performance, productivity, and efficiency of the employee, it introduces a risk of technostress which is associated with usage of ICT and often overlooked (Harris et al., 2021). In addition, being always virtually available leads to a number of ad-hoc requests which interrupt scheduled work on a regular basis (Vargas-Llave et al., 2020). Moreover, a virtual environment is highly dependent on connectivity, mainly the availability and speed of the Internet, which is likely to be better in urban areas where most office spaces are located, whereas the quality of the Internet access may vary on employees' premises depending on their location and may result in loss of information and working time.

The social environment is the broadest of the work environment dimensions since it collects different aspects from the organizational and employee perspective. One of the main drivers of social environment is the level of employees' autonomy to determine their methods of working (e.g., order of tasks, speed, free choice for breaks), which is defined by the agreement between employee and employer and mostly shaped by managerial attitudes towards WfH (Vargas-Llave et al., 2020). On the other hand, workers should also be capable of adapting to the given autonomy at work which requires a high level of self-control, self-motivation, and self-leadership, also balanced multi-tasking skills to avoid fading of the work and personal life boundaries (Aczel et al., 2021). Other factors like clear goals and policies, organizational habits and support are triggered by company strategy, values, and culture. For a successful WfH arrangement, companies' management is mainly responsible of generating the rules for these factors. The author concludes based on the learnings from previous studies (Aksoy et al., 2022; Barrero et al., 2021) that WfH will potentially fail if the managerial attitude doesn't support the arrangement. Social isolation and decreased communication between employee and employer may negatively impact career prospects, as observed from the results of the Chinese call center experiment (Bloom et al., 2015).

According to Eurostat Employment annual statistics released in April 2021 (*Employment - Annual Statistics*, 2021) working sometimes or usually at home has increased steadily in Europe during the past 15 years, from 10,1% in 2006 to 14,4% in 2019. The highest peak was reached in 2020, with 21% resulting from the Covid-19 impact on the labor market. Gallup reported in October 2021 that in the United States, 52% of employees worked fully or partially from home by November 2020 (Saad & Wigert, 2021). Covid-19 forced compulsory WfH experimentation globally, impacting almost every organization, and in the early stages of the pandemic, perceptions on WfH varied from one extreme to another. Dan Price, CEO of Gravity Payments, responded to an employee research poll asking about

workplace preferences on his social media platform "Do whatever you want. As a CEO, what do I care? If you get your work done, that's all that matters" (Dan Price, 2022). While Price's response was rather unusual but very supportive of the WfH arrangement, the CEO of Goldman Sachs, David Solomon was fully against the WfH idea, saying that it doesn't fit his innovative company and WfH will not be the new normal ("Goldman Sachs," 2021).

Regardless of the initial views by many high-profile people in the beginning of the pandemic, research shows that employees value 2-3 days a week hybrid WfH arrangement equally with a 5% pay raise, and as many as 15% of employees would quit their job in case returning to office full time would become mandatory. In comparison, employers would allow WfH one day a week. Despite the different expectations from employees and employers, the perceptions on WfH have globally increased on average by 35% since the beginning of the pandemic. (Aksoy et al., 2022) According to a survey, there is a significant shift toward WfH as desires to work from home have increased four times compared to pre-Covid, mainly due to listed reasons below (Barrero et al., 2021):

- Covid-19 forced experiment changed the attitude towards WfH and views on employee productivity. Some employees and employers have learned that WfH works much better than expected or thought, diminishing the stigmas associated with WfH previously.

- Investments done by companies and workers to physical, human, and organizational capital in response to pandemic improve WfH capabilities and re-optimize working arrangements. Purchases like a better chair, desk, or computer equipment for home office use, as well as company investments to information and communication software, are long-lasting and therefore contribute to WfH.

- Less commuting time cuts back consumers' spending on food, shopping, and entertainment near working places in the cities. It means a considerably significant drop in revenue for the businesses located near the office districts, however a considerable saving for employees in terms of time and money.

- Pandemic triggered innovations in WfH technologies (video conferencing, remote interactivity) and therefore contributed to the advancement of technologies that improve the quality and productivity of telework.

It is observable that WfH is a favored option mainly by employees but also supported by the companies after pandemic-infused learnings. Another vital factor enabling WfH is the

digitalization of the economy and the development of information and communication technology (ICT). These advancements have enabled companies to offer flexible forms of working in terms of time and location already before Covid-19. On a very high level, it could be considered that ICT-enabled jobs can be executed remotely as the working tools mainly include information and communication technologies and related software, such jobs can be found in the professional and scientific activities sector but also in retail and wholesale. In Europe, home-based ICT-enabled work is mainly found in information and communication, financial services, professional and scientific activities, education and administrative services sectors (Vargas-Llave et al., 2020). Similar results are concluded from a survey performed in the US, implying that 37 percent of jobs are applicable for WfH, including occupations in computer and mathematics, education, legal, business and financial services, and management (Dingel & Neiman, 2020).

To successfully practice WfH, the work environment sets a bundle of requirements for workspace, virtual and physical tools, as well as the mentality and skillset of employees and employers. It has many facets that impact employees' productivity, work-life balance, and ways of working, both in negative or positive ways leading WfH to succeed with excellent results in execution of work tasks and well-being or fail causing mental and physical distress and decrease in productivity work performance. Based on the previous academic research and literature, WfH definition and concept are continuously improving due to the development of technology, learnings from global pandemic-triggered experiment, and shift in mentality toward WfH.

1.2. Self-leadership definition, related strategies and outcomes

Historically, the importance of management-level leadership and the influence on employees has been emphasized and discussed, however less has been researched about self-leadership – the way people manage themselves. The following subchapter covers the definition of self-leadership and related strategies, explains well-known methods to measure individual self-leadership skills and elaborates on the supportive internal and external features and outcomes of successful self-leadership.

Self-leadership is originated from related theories on self-influence, self-regulation, self-control, and self-management, defined as a state in which a person is presented with different alternatives and consequences and forced to choose the most observable without having any external control. Such state includes setting personal goals, instructing oneself to achieve the goals, and evaluating based on existing criteria. It can be developed through

different procedures such as self-observation, specifying goals, applying cueing strategy, self-administrating consequences, self-evaluation, or rehearsal. In addition, the concept considers individuals' will to pick up motivating tasks and manage those that must be done. Here complementing strategies like work context and task performance process are incorporated, along with managing employees' thought patterns. (Manz, 1986; Manz et al., 1980)

Houghton & Neck (2002) defined self-leadership as follows, self-leadership is a process of behavioral and cognitive self-evaluation and self-influence whereby people achieve the self-direction and self-motivation needed to shape their behaviors positively to enhance their overall performance. More precisely, self-leadership involves specific sets of strategies that can be divided into behavior-focused, natural reward, and constructive thought pattern (Houghton et al., 2012).

Behavior-focused strategies are about observing and identifying one's behavior that can be modified or eliminated through setting goals that may improve persons performance and motivation. In addition, rewarding oneself with a simple praising thought or something material, such as a cup of coffee, a chocolate bar, or even a nice piece of new clothing for a job well done, is considered a reinforcing practice for specific behavior. Another behavior-focused strategy is self-assessment or feedback, which essentially means evaluating failures and unproductive behavioral patterns. Practicing self-evaluation regularly enables correcting habits and forming expected behavior. To support managing behavioral patterns and to keep focus, one can find help in using to-do lists, planners, or diaries. Natural reward strategies are features incorporated into a task so that the task itself becomes rewarding and pleasant. It may also include external features like decorations, music, plants, or specific views around the working area. The third strategy in self-leadership is constructive thought patterns that include evaluation and challenging dysfunctional thought processes that negatively affect individual performance and encourage mental imagery toward positive future success. (Harari et al., 2021; Houghton et al., 2012)

On the individual level, self-leadership is measured using scales to capture different facets of how individuals lead their behavior and thoughts. Self-control and self-management scale (SCMS) is a behavioral and cognitive coping skills model to measure the content scope of SCMSk, conceptualized by Mezo (2008). The three-component model defines SCMSk consisting of three processes: self-monitoring (SM), self-evaluating (SE), and self-reinforcing (SR). During SM process, an individual monitors actions, thoughts, or emotions. In SE phase, an individual compares and identifies the target behavior to an internal standard. Finally, because of SE comparison, an individual engages in self-reinforcement, which may involve

self-reward or self-punishment. A 16-item self-control and self-management scale (SCMS) is a self-report instrument that was created to measure the skills quantitively.

Houghton and companions (2012) conceptualized a nine-item Abbreviated Self-Leadership Questionnaire (ASLQ), which is an abbreviated version of the Revised Self-Leadership Questionnaire (RSLQ) developed by Houghton and Neck (2002). ASLQ includes of three components Behavioral Awareness and Volition (BAV), containing self-observation and self-goal setting, Task Motivation (TM) includes visualizing successful performance and self-reward, and Constructive Cognition (CC) component that captures self-talk and evaluation of beliefs and assumptions. Table 2 gives a theoretical framework of the two self-leadership measurement scales components and content.

Table 2

Overview of self-leadership measurement scales

Measurement scale	Components in measurement scale	Content
Self-Control and Self-Management Scale (SCMS) (Mezo, 2008)	Self-monitoring (SM)	Monitoring of individual target behavior like thought or emotion. **Keywords:** undivided attention, awareness of thoughts related to task engagement and completion, goal-related tracking, efficiency, and internal control.
	Self-evaluating (SE)*	Individual compares and identifies discrepancies in the target behavior. **Keywords:** low valuation of achieved goals, setting difficult standards for achieving goals, low efficiency.
	Self-reinforcing (SR)	Engagement to self-reinforcement which includes self-reward or punishment. **Keywords:** positive self-talk, control-reward, experiencing positive emotions.
Abbreviated Self-Leadership Questionnaire (ASLQ) (Houghton et al., 2012)	Behavioral awareness and volition (BAV)	Combination of: • Self-reward – individual rewards to motivate or discourage certain behavior. • Self-observation – intentionally observing and evaluating own performance, emotions, and thoughts. • Self-punishment – own assessment and improvement, including self-criticism and evaluation aiming to correct performance. • Self-goal setting – setting near future goals that individual wishes to accomplish. Contributes to prioritization and self-motivation. • Self-cueing – individual practices to remember to execute tasks.
	Task motivation (TM)	Actions that enhance motivation to complete near future tasks: • Challenging arising problems • Creating motivating conditions and environment Changing perceptions from negative to positive
	Constructive cognition (CC)	Mental preparations before assignment: • Development of habits and positive thinking • Self-talk, a mental self-evaluation • Visualizing positive performance and outcome of task • Using experience and positive thoughts

Notes: * SE is keyed negatively in the measurement questionnaire

Source: Created by author, based on (Houghton et al., 2012; Mezo, 2008)

While Houghton and Mezo concentrated solely on the self-leadership, Palvalin (2017) conceptualized a tool that enables measuring work environment changes to knowledge work productivity, called the SmartWow. The construction of the framework explains that drivers set the frame and basis for working, whereas the results and outcomes show whether the knowledge worker takes advantage of the drivers. The SmartWoW tool consists of six dimensions divided into work environment and knowledge worker. The work environment is divided into three dimensions, physical environment includes of workspace and measures its' functionality, ergonomics, collaboration, and concentration capabilities. The virtual environment includes software and hardware available for workers to communicate and collaborate and measures the connectivity and accessibility to the information. Social environment measures whether knowledge workers are supported or allowed to have autonomy and utilize new ways of working in terms of attitudes, common routines, policies, and organizational habits. The work environment is explicitly covered in the subchapter 1.1. of this paper. Individual work practices explain workers' willingness and motivation to e.g., adopt new ways of working, have control over schedule, workload, and interruptions. Well-being at work is measured through statements of job satisfaction, work engagement, work-life balance, stress, and appreciation at work. The last dimension in the framework is productivity, measured by statements related to work efficiency and effectiveness, achieving results, goals, utilizing skills, quality of work, and individual and team performance. Figure 1 illustrates and explains the content of the framework.
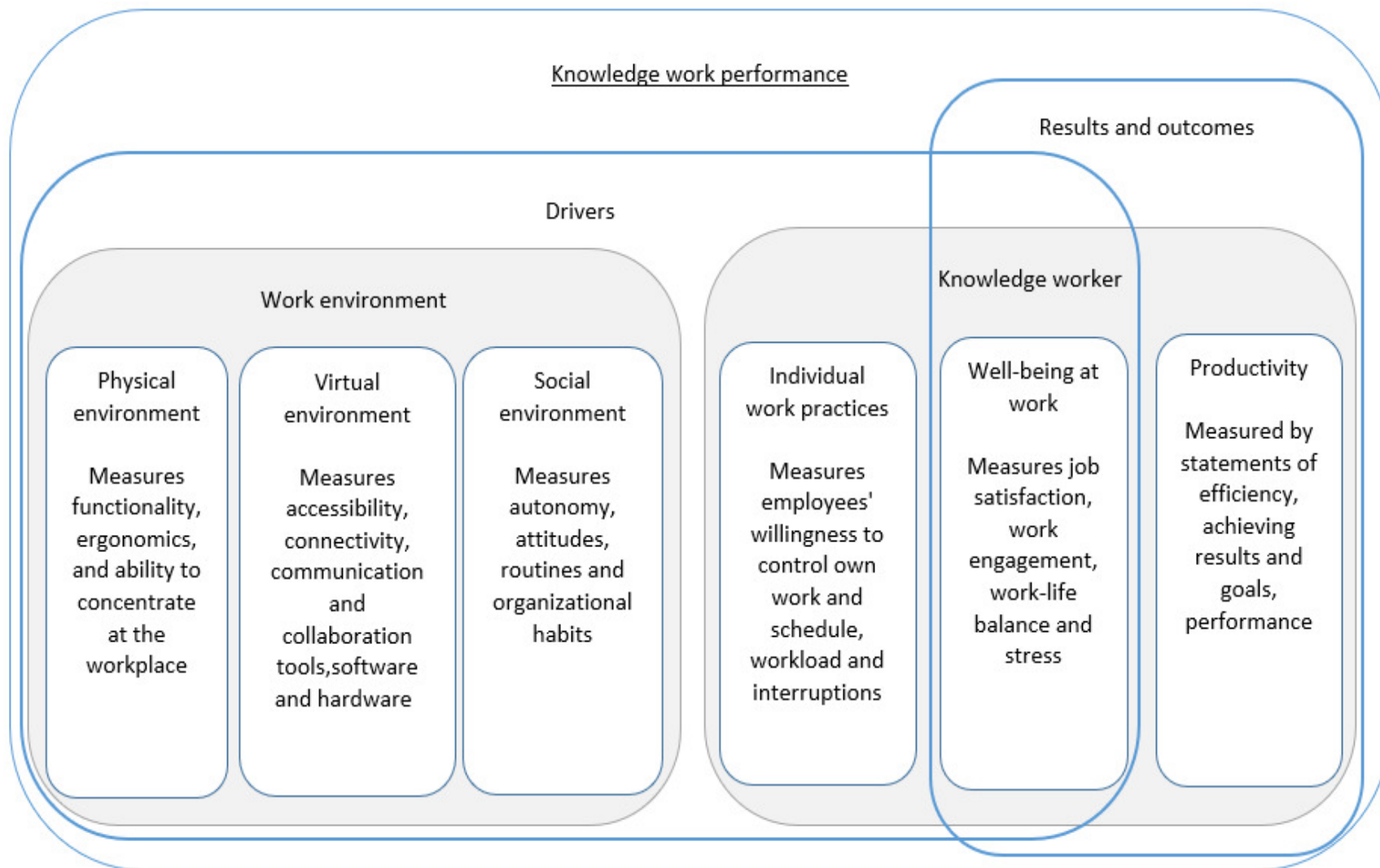
Figure 1. SmartWoW framework and content for knowledge work performance.

Source: Created by Palvalin (2017), enhanced by author.

Palvalin and companions (2017) conducted research utilizing the SmartWow tool to explore the impact of workplaces for concentration and communication and self-management practices on individual and team productivity. It was found that self-management has a larger impact on individual and team productivity than workplaces, space for collaboration and self-management was found to be more important than space for concentration. The self-leadership measurement scales have been designed to adequately assess individual level of self-leadership skills and give indications of the areas that need improvement.

Self-leadership skills can be developed through continued practice and attending dedicated programs but are also supported by internal and external features, both on individual and company level (Stewart et al., 2011). On the individual internal level, natural rewards can be derived from the tasks or activities themselves, or an individual can also embed rewards into the process of executing tasks. In essence, a person should find and focus on aspects of the task that are pleasant and enjoyable to do, even if the task as a whole is not. In addition to natural reward, another internal force toward successful task execution is managing own thinking. In particular, positive self-talk, imagining a positive outcome, challenging own thought patterns and beliefs. An external feature that can support individual-level self-leadership development is training programs targeting specific strategies for the desired outcome. Such programs help improve self-leadership outcomes like good time management, working toward goals, executing processes, understanding communication, and decision-making. To be noted that professional improvement programs are stand-alone, lack a long-term influence and instructions on how to maintain and develop the skills, it is suggested to add a discipline to revisit or reinforce the training programs' learnings either collectively in the organization or individually (Goldsby et al., 2021).

Despite self-leadership theory expects little to no external guidance or leading, another external feature to support employee is leadership. It is necessary to allow, assist, and give autonomy to employees so that grounds for practicing self-leadership exist in the company. Empowering employees is a practical approach in leadership theory, implying that in such employees not only participate in the management process but also learn to be their own leaders (Manz & Sims, 1986). While this paper mainly focuses on individual-level self-leadership, the team self-leadership is briefly discussed as essentially, they supplement each other.

On a team level, factors like who is in the team and what tasks are done support self-leadership on a team level but also has an impact to individual-level skills. A shared understanding of the team's tasks, equipment, and interactions improve planning,

communication, and co-working, additionally teams benefit from individual characteristics the most when processes are developed to allocate tasks that match with individual team member. An essential variable to team-level self-leadership is general mental ability as it reflects the ability to work with complex and challenging tasks independently. External features like external team leadership enhance team self-leadership, similarly to individual-level self-leadership, by providing coaching and other resources. Reward systems, organizational structure and culture improve team self-leadership when employees are evaluated and rewarded for their work and involved in a culture with a low level of formalization. (Stewart et al., 2011)

Furthermore, a high level of self-leadership skills has proven to be beneficial on a personal and organizational level, showing improvements on different work-related outcomes. A research article, that is one of the only using diary study to examine self-leadership, found that self-leadership is positively related to employees' job performance in times when employee doesn't need guidance or inspiration from the leader, or is distant from colleagues, e.g., working from home (Breevaart et al., 2016). Individuals engaging in high level of self-leadership strategies are likely to be actively engaged in their work (Knotts & Houghton, 2021). In addition, constructive thought patterns (e.g., positive self-talk, envisioning positive outcome of tasks) can enhance job satisfaction and general well-being and decrease dysfunctional thought processes like overgeneralization, dependence of others, desire for social approval, and perfectionism (Houghton & Jinkerson, 2007).

The behavior-focused aspects of self-leadership, specifically self-observation, self-goal setting, self-reward, and self-reinforcement, improve employees' creativity at work. These factors trigger individual self-awareness that helps to review and solve problems. Employees with good awareness of personal strengths and weaknesses, focus, and self-drive are more likely to develop creative ideas without external guidance or inspiration. (Ghosh, 2015) Therefore, a high level of employee self-leadership skills contributes to organizational innovations and can be supported by the company through conscious training, mentoring, or coaching employees' self-leading skills.

Presents of self-leadership processes in an individual helps to prevent and manage work-related stress or anxiety. While environmental factors can create stress in an individual, self-leadership helps to prevent, intervene, and cope with stress or anxiety. Self-leadership has shown greater career success due to the ownership that a person takes while practicing self-leadership, this is mainly triggered by the great level of stress management skills that occur while self-leading oneself, improving performance at work or during the job

interviews. Increased self-leadership also decreases absenteeism through continuous self-monitoring, taking ownership, and the need for completion or efficiency. (Goldsby et al., 2021; Stewart et al., 2011)

Goldsby and companions (2021) reviewed the fourth decade of self-leadership research and training. They found that the most researched topics in the self-leadership literature over the last decade are creativity, innovation, education, external leadership, measurement, ethics, job satisfaction, decreased stress and anxiety. These topics are related to the outcomes of good self-leadership and have mostly been researched among customers, patients, and students. In terms of training, professional certification programs listed in the review are categorized based on philosophy: positive psychology around psychological talent development, entrepreneurial talent development, innovation style, preferences, tools and processes, communication and conflict style, design thinking, and time management.

In conclusion, the self-leadership can be natural for some individuals but not for the others, regardless, skills for better management of oneself can be acquired through continuous practice and reinforcement. By consciously monitoring own behavior, self-leadership can offer great support to the individual to manage work tasks, be productive, efficient, and successful in their role and future development on a personal level. On an organizational level, self-leading employees contribute to innovative development, they are more engaged and satisfied with a job, therefore, eliminating much managerial work. It becomes evident that while a high level of self-leadership contributes to personal job success and individual level development, the work environment factors, and relationship with self-leadership have not been the interest of research topics. Likewise, the increasing trend of telework introduces the need to study employees executing work tasks and communicating using ICT.

2.   Empirical study on the relationship between home-based work environment and self-leadership

2.1. Research method and process

This Master's thesis concentrates on thoughts and feelings that people encounter within the home environment as well as their actions in tackling issues and gaining maximum benefit from the usage of self-leadership processes and work environment. The following subchapter of the thesis gives a detailed description of the research method, process, and describes the sample selection criteria and data analysis methods, used for the empirical study, conducted within the scope of the Master's thesis.

Author of the thesis conducted exploratory research using diary study as primary research method and participants observation as secondary. These research methods were selected as the author believes it enables collecting, analyzing, and explaining the relationship between the home-based work environment and self-leadership. A diary study is a qualitative research form in which participants log their feelings, experiences, and habits over a certain time period, usually from a few days to a couple of weeks (*Diary Studies*, n.d.). It enables finding patterns in the samples' behavior and the change in perceptions to draw generalized conclusions. Participant observation is a qualitative research method which objective is to learn the study participants' perceptions, enabling researchers to gather and understand various perceptions and interactions between those (Mack et al., 2005). The method includes direct engagement of the researcher to act as part of the study population, which allows to observe and interpret the context of the responses. Such research method suited well to this study since the author of the thesis has a close working relationship with the company and the sample of this study which enabled easy and trustworthy interaction and information sharing between the parties.

As a first step in the research process, the author compiled a research plan, summarized in figure 2, which sets the timeline and basis for the study. The author will explain each of the steps taken in the research.
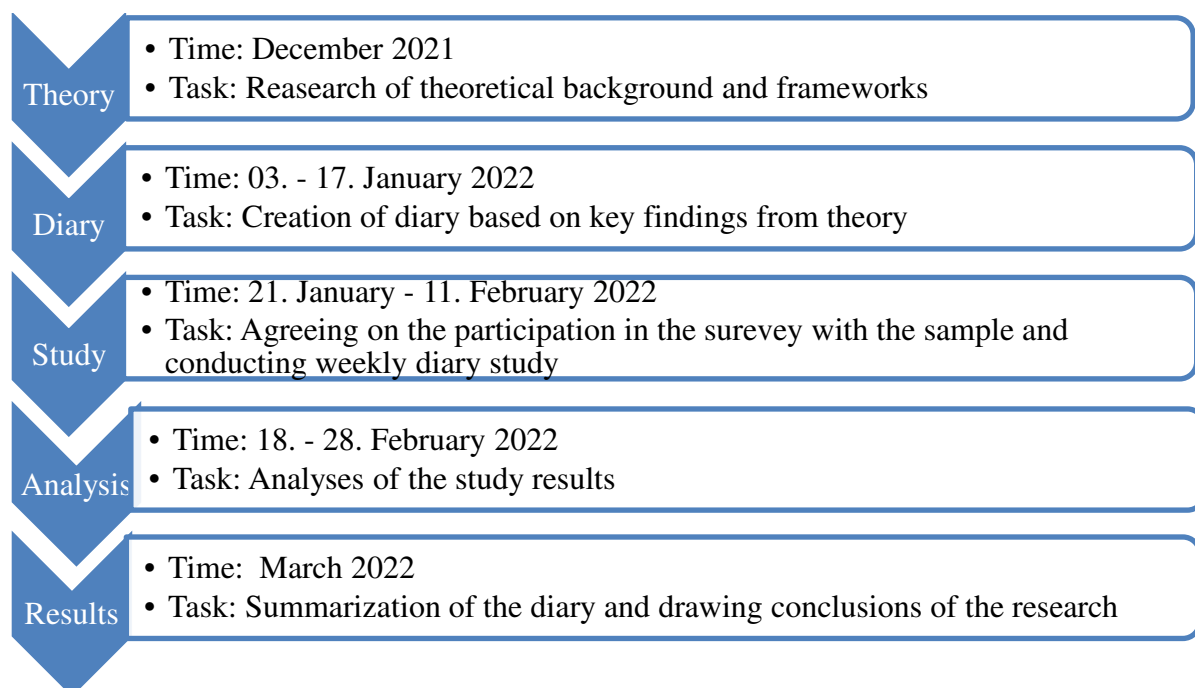

Theory
- Time: December 2021
- Task: Reasearch of theoretical background and frameworks

Diary
- Time: 03. - 17. January 2022
- Task: Creation of diary based on key findings from theory

Study
- Time: 21. January - 11. February 2022
- Task: Agreeing on the participation in the surevey with the sample and conducting weekly diary study

Analysis
- Time: 18. - 28. February 2022
- Task: Analyses of the study results

Results
- Time: March 2022
- Task: Summarization of the diary and drawing conclusions of the research

Figure 2. Research plan

Source: Created by the author

In December 2021, the author observed previous studies and theoretical frameworks related to WfH, home-based work environment, and employees' self-leadership. A detailed overview of the theory is discussed in the first chapter of the Master's thesis. The research preparations continued by creating a diary based on the theoretical background gathered in the first step of the research plan. A six-question diary was formed for this study, including four open-ended and two 10-point Likert scale questions. Open-ended questions help to give more story to the data and are a great option in cases where a researcher is interested in capturing details and getting an answer to the question "why?". They don't limit or specify what the respondent needs to answer, it is up to the respondent how much and what they want to share. Table 3 displays the list of questions in order of occurrence in the diary and the connection to theoretical frameworks developed by Mezo (2008), Palvalin (2017), and Houghton (2012) that were the basis of this research.

Table 3

Diary questions and relation to the theory

No.	Question in the diary	Relation to theoretical frameworks	Question type
1.	How was your working week?	Well-being at work	10-point Likert scale
2.	Describe your well-being during the past week.	Well-being at work; Self-monitoring; Social environment; Individual work practices	Open-ended
3.	Describe your working practices during the week.	Self-monitoring; Individual work practices; Productivity	Open-ended
4.	Describe your physical working environment.	Physical environment	Open-ended
5.	Rate your internet quality during the week.	Virtual environment	10-point Likert scale
6.	Evaluate the virtual environment during the past week.	Virtual environment; Social environment	Open-ended

Source: Created by the author

To collect feedback on the usability and understanding of the statements and sub-questions, the diary was piloted on one of the employees who was also fitting to the survey sample. A constructive set of notes was received, e.g., the initial diary was created in the form of a chatbot that interacted with the respondent, however, the tool didn't enable easy change of prior responses, hence, the idea was dismissed by the author and Google Forms application was used instead. Another note was related to the understanding of the

statements, a clarification was given within the instructions sent to the whole sample of the research via e-mail.

The sample of the study was selected based on the following two main criteria:

- an individual working mainly from their home
- an individual conducting work tasks using information and communication technologies

Potential participants for the research were reached out from company X during the 3rd week of January 2022, and the total amount of participants was confirmed to be ten employees who work in Finland and Estonia. The sample included men and women of different ages, nationalities, and professions, it is important to note that they have close professional touchpoints and work for the same divisional targets. In this study, socio-demographical features were not included since the size of the sample and duration of the study would not enable drawing conclusions based on these features. The diary study period started on January 21, 2022, lasted for four weeks, with once-a-week diary entries expected from the participants. A web link to the diary was sent to participants via e-mail every Friday, along with instructions and definitions of keywords used in the diary to better understand the context. As some of the participants were absent from work during the study period, the total amount of responses received was 35 (87%) out of expected 40, which is still considered a relatively high individual-level response rate compared to the average 53% (Baruch & Holtom, 2008). To be considered that the study was conducted under the circumstances of Covid-19 restrictions, where WfH was suggested by the company but not mandatory.

Thematic analysis using a categorization system was applied to organize and manage the open-ended question responses. This is a widely used method for analyzing qualitative data to generate patterns from the dataset through data categorization, coding, or theme development, applying inductive, deductive, sematic, or latent ways (Braun & Clarke, 2006). To further explore and familiarize with the data, responses are classified by their tone based on two scenarios. First, the respondent has either positive, negative or both tones in their answer to a question or while elaborating a statement. A positive tone reflects joy, satisfaction, or feelings of achievement, whereas a negative tone points to feelings of worry, dissatisfaction, or irritation. The second scenario for the tone comes from the definition of the sub-components and is considered positive if a person's behavior or actions match with the definition, otherwise marked as negative. Setting the tone of the responses is important for the author as the questions in the diary are not designed in such that would require the

respondent to bring out the negative or positive. The diary method is specifically used to capture the most authentic feelings and thoughts through the survey.

For data analyses, the author used MS Excel to extract key elements, apply tone for the responses and map key elements to sub-components. Excel spreadsheet was used to import raw data to MS Power BI where the calculations and visualization was done.

2.2. Employees' opinions toward self-leadership and the work environment

In the second subchapter of the empirical part of the Master's thesis author analyzes the results of the study and explains the content of the responses. The following is based on the collected data and the information gathered during participants' observation.

The first question in the diary asked the participant to rate their workweek on a 10-point Likert scale. The average rating on the working week resulted in between 7,88 - 8,71 points during the whole 4-week study period, however, the variance in responses fluctuated drastically over the weeks (see Figure 3). As the average rating on the week remained high and had minimal changes between the weeks, it is concluded that respondents are generally satisfied with their work and the surrounding environment. The highest variance in the workweek rating occurred during the second (last week of January 2022) and third week (first week of February 2022) of the study. It is known to the author that for some participants, the period between two months means a higher workload due to the closure and finalization of the previous month's reports, which is likely to be the reason for the fluctuation. Additionally, it was observable from the open-ended questions that during these weeks, some participants got ad-hoc work tasks which led to disturbance in planned work and missing of resources due to sick leave of a colleague.

Figure 3. Average and variance of the rating on the working week.

Source: Created by the author based on study results.

The preliminary data categorization was done using a combination of deductive and inductive categorization. Deductive categories, named components and sub-components, were extracted from theoretical frameworks and the research questions of this study. There are two main components, self-leadership, and work environment, divided into four sub-components. Inductive categories, called key elements in this work, were generated by the data collected through the study and then mapped to respective sub-components. The final set of components, sub-components extracted from the theory, and key elements generated from the data are displayed in table 4, including the division of the tone and total count of the key elements. The color-coding in the table 4 highlights that the self-leadership component is present in the data primarily with a positive tone (colored in green in the table) whereas work environment gravitates toward a negative tone (colored in red in the table).

Table 4

Data categorization and key elements

Component	Sub-component	Key element	Count of positive tone	Count of negative tone	Total key elements in sub-component
Self-leadership	Individual work practices (IWP)	Controlling interruptions	0	3	53
		Goal setting	20	6	
		Managing own work	14	10	
	Productivity (P)	Achieving results and goals	12	2	26
		Efficiency	1	3	
		Team or individual performance	4	4	
	Self-monitoring (SM)	Awareness of thoughts	3	0	16
		Keeping focus	12	2	
	Self-reinforcement (SR)	Self-reward	6	0	6
		Subtotal	72	29	101
Work environment	Physical environment (PE)	Atmosphere	11	1	62
		Change of location	1	9	
		Concentration	2	0	
		Ergonomics of workplace	9	29	
	Social environment (SoE)	Autonomy	6	3	24
		Organizational routines and habits	0	15	
	Virtual environment (VE)	Accessibility	0	1	30
		Communication and collaboration	6	4	
		Connectivity	1	5	
		Hardware performance	0	5	
		Lack of knowledge	0	1	
		Software performance	1	4	
		Power cut	0	2	
	Well-being at work (WB)	Appreciation	0	1	30
		General well-being	1	8	
		Job satisfaction	1	0	
		Work-life balance	7	12	
		Subtotal	46	100	146
		Total	**118**	**129**	**247**

Notes: The color-coding in the table highlights the inclination of response tone in the total count of key elements. Positive tone is marked in green and negative tone in red.

Source: Created by the author based on Mezo (2008), Palvalin (2017), and collected data.

The **self-leadership component** contains nine different key elements, captured from the responses 101 times in total, either with a positive or negative tone, and mapped to four sub-components. The sub-component **individual work practices (IWP)** can be explained through key elements from which the goal setting and managing own work claimed the most notes from the responses. A positive tone is dominant in the goal-setting element, these are collected from the responses where the respondent had indicated practicing goal setting in any given form, for example, usage of daily or weekly to-do lists and utilizing these to prioritize individual work, capturing and incorporating ad-hoc tasks to the existing task list, or working with the tasks which have the most impact to overall results.

"I always set daily and weekly goals to myself. I did that for this week too. However, this week was a little bit unusual as I needed to make sudden changes to my timetable. Mostly I was able to keep focus and completed the planned tasks." (Response 1)

Despite the low count of negative tone in the goal-setting element, some interesting aspects are captured.

"Tasks are already prioritized within the team, so I know what to focus on." (Response 3)

It is known to the author that some of the participants of the study work in teams where the scrum methodology is used to plan and execute work tasks within the next two-week period. It is mentioned in the responses that the work tasks are given and already prioritized for the individual, which essentially contributes to good teamwork planning, however, in the context of IWP, it is expected that the individual takes ownership over his tasks and sets the goals according to available capacity. It should also be noted that scrum methodology assigns the tasks but does not define the order of priority in which the person should execute them. Another note counted as negative in the goal-setting element mentions that the person sets monthly or yearly goals but not weekly, indicating that such practice can get unorganized.

The count of negative and positive tones is closer to equal for managing own work. This element includes notes from responses mentioning management of own time, workload, or ability to adjust according to the need. Positive notes gathered from the responses involve, for example, adjusting priorities based on incoming ad-hoc tasks, scheduling time to prepare for meetings, or creating a good work rhythm. These were mentioned together with the

intention to get things done and eliminate the stress that could be caused by disturbance of regular work.

"Since there was a lot of meetings, made sure I was prepared for those in order to advance things." (Response 5)

The count of negative tones for managing own work is mainly triggered by notes where the person was not able to manage own time due to a number of meetings during the day, leaving little or no time to do individual work or the person needed to engage to ad-hoc discussions leading to postponing tasks to another day.

"But my working time was interrupted by unnecessary ad hoc discussions, then I postponed my work to the following day or week." (Response 15)

"The non-meeting hours could have been doing my planned work or learning, but filled with all ad hoc calls." (Response 32)

Estimation of how much time a task would need is the second most apparent note throughout the responses impacting IWP negatively.

Productivity (P) sub-component comprises notes of achieving results and goals, mentions of efficiency, and team or individual performance evaluation, which were present in responses 26 times. The most notes were collected from achieving results and goals with a positive tone, such noted include fully or partially completing planned tasks implying that participants acknowledge achievements at work.

"Had set achievable target so feels good when things get completed and also not much of stress." (Response 17)

Efficiency and team or individual performance was not mentioned too often in the responses, most notably it was brought out that for the efficient delivery of work, the general mentality of being realistic of how much work one can deliver should be present on individual and team level. On the other hand, inefficiency was mentioned in relation to unnecessary discussions or meetings that feel demotivating for some participants. It does not come apparent from the responses what exactly causes such unnecessary actions. Team or individual performance

notes are mainly related to the successful completion of tasks or positive feedback received in relation to performance.

"Our team gets a lot of good words about how motivated we have been and how well everything has progressed." (Response 9)

The negative notes come from unplanned tasks or missing cooperation between colleagues that affect the delivery of tasks and overall performance.

       Despite the **self-monitoring (SM)** and **self-reinforcement (SR)** sub-components being mentioned least in the self-leadership component, both claimed mostly positive notes. In particular, keeping focus seems to be important for the participants to maintain, for example, during or between meetings and in cases of urgent or time-critical tasks.

"I managed to keep focus and compete tasks mostly but there were situations when something urgent came up and I had to change my original plans." (Response 16)

This is mapped to the self-monitoring sub-component as it requires a person to monitor one's actions and thoughts purposefully. It is also said that team and individual-level planning helps to eliminate urgent ad-hoc work that would drive the focus off from regular schedule.

"At my organization and team planning is done pretty well so there are really no 'very urgent and important matters' that just come up for resolving which enables you to focus on the goals and items you set." (Response 20)

In addition, it becomes evident that support from colleagues helps to maintain focus. This can be explained by notes related to getting guidance or instructions that help move forward with work tasks and, therefore, eliminate the possibility of losing focus. Negative tones related to keeping focus are mentioned on a couple of occasions in relation to a work environment that has distractions or limitations regarding physical capabilities at home.

"Working environment is poor at home. No proper desk, chair, monitor, bad seating position, noisy neighbors, personal distractions. Exhausting and hard to focus." (Response 10)

Self-reward includes positive thoughts toward completion of tasks, rewarding oneself with something material or discouraging certain behavior. From this research, some self-rewarding actions surface, such as trying to do something relaxing during the weekend to stay motivated, buying ice cream, laying down to have a rest or feeling happiness after completion of a task, and chancing working habits such that would enable slowing down toward the end of the week instead of leaving items for Friday when for some participants there are fewer meetings.

The **work environment component** includes 17 key elements mentioned in the responses 146 times with negative or positive tone and mapped to four sub-components. Firstly, the **physical environment (PE)** contains 62 elements, both with a negative and positive tone, from which atmosphere claimed the most positive notes and ergonomics of workplace negative notes. The atmosphere key element considers responses describing the external factors making the environment pleasant to stay in. Respondents brought out, watching birds eating seeds at the window, having more daylight, peaceful surrounding, and a relaxing view from the window. But it was also mentioned that working from home doesn't have a productive environment similar to working at the employer premises with other colleagues.

"I actually went to the office one day mid-week and it felt much better than home office. I feel I was more productive and was able to catch up with some colleagues face to face" (Response 12)

Ergonomics of workplace appears to be the biggest pain point for the study sample as it was negatively mentioned 29 times. This key element comprises notes related to equipment, noises, and external distractions. While 6 out of 10 respondents say they have a dedicated working area at home, the conditions seem to be very different. Many notes about uncomfortable chair or table, mainly related to being unable to adjust the height or work in a standing position. In a couple of cases, missing of additional monitor or mouse was mentioned as well as room temperature.

"The right arm using the mouse needs some rest. I should maybe consider a place where I could stand." (Response 13)

"The chair and table are not very comfortable but I am used to those as working from home has been lasting for so long." (Response 1)

Distractions mainly occur from movements or sounds of other family members like children if not able to go to school or kindergarten, a spouse who is also working from home, pets who need attention during the day, and outside noises, e.g., neighbors or passing cars. Another aspect that is very much visible in the responses and impacts the ergonomics of home-based work is the change of location. In WfH context this means either switching between rooms to get privacy for calls or concentration at home or choosing to go to the office for a better environment.

"I do not have my own workspace. I usually sit at the kitchen table. If I need more silent place, I can use one of our bedrooms." (Response 30)

The **social environment (SoE)** sub-component includes autonomy and organizational routines and habits. Autonomy key element captures responses related to individual having the possibility to organize their own ways of working in terms of time allocation or the order of tasks without immediate guidance. Organizational routines and habits compress items related to ways of working together, socializing, or meeting practices that contribute to individual work. Although the sub-component hasn't been mentioned many times in the weekly diaries, some interesting notes were captured. From the autonomy perspective, it is apparent that employees have the freedom to organize their work. This becomes evident in the notes where individuals are continuously planning their own work tasks with only some occasions mentioning external guidance like having the team level planning or someone else setting the priorities.

"I can prioritize what I need to do and when. In between working when I have some free time I can focus on some personal tasks as well which would be impossible to do if I was in the office because then I would have to return home and then think about doing them."
(Response 6)

Regarding organizational routines and habits, this key element was mentioned with a negative tone only. Having too many meetings or trying to find time to execute work tasks between meetings has been mentioned several times, essentially leading to loss of attention or

over hours. A decrease in social contacts has been noted in a couple of occasions in the responses, generating feelings of isolation or missing out on information.

> *"But the social contacts have been decreasing as everybody are just attending calls from home, no more adhoc discussing during the weekdays."* (Response 1)

Usually, virtual meetings don't include random off-topic discussions that sometimes give a new perspective or even knowledge. In addition, due to some employees being or going on a holiday, the information needed to continue with a task was missing, therefore blocking individual progress. Unplanned work such as ad-hoc tasks, requests, and questions are also noted as having a negative impact on the social environment sub-component.

       The third sub-component in the work environment is a **virtual environment (VE)** that includes key elements from notes related to hardware, software, accessibility to information, connectivity, including internet speed and quality. The fifth question in the diary asked the participants to rate their internet quality during the past working week on a 10-point Likert scale. Figure 4 displays the average and the variance of the rating during the four-week period.
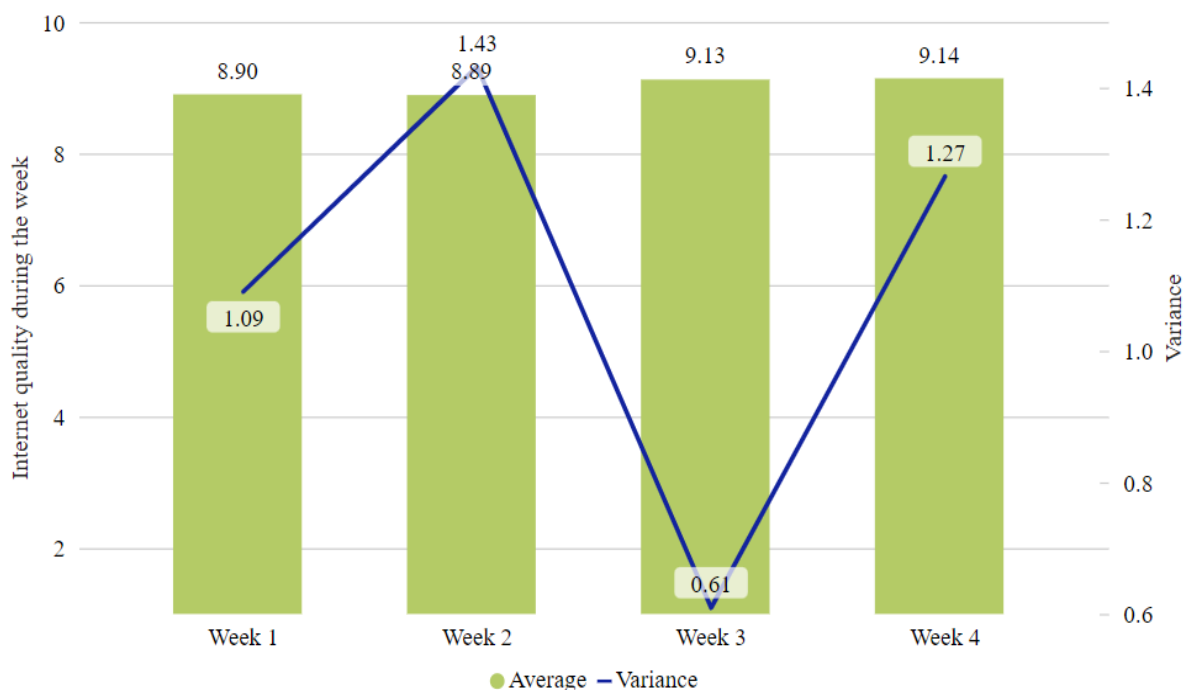

Figure 4. Average and variance of the rating on the internet quality.

Source: Created by the author based on study results.

While the average rating of the internet quality scores high throughout the study period, scaling between 8,89 - 9,14 points on average, the variance in the responses fluctuates tremendously, specially during the second and fourth week. This can be explained by responses from where it is described that internet quality was very poor and required rebooting.

"Something is wrong with our internet, have to reboot everything when internet is bad. After rebooting, internet is good again. If there is no meeting, I can reboot, but if there is non-stop meetings, bad internet is really annoying.... I couldn't hear what others say and I couldn't comment...." (Response 15)

Such an issue occurred twice in the responses, and in both cases, it impacted the quality of participating in a meeting resulting in losing information and time. Another issue occurred for one respondent where he/she used a mobile phone as a hotspot to connect to the network with a laptop, essentially leading the mobile phone to run out of battery very quickly. It is not explained in the response why such connectivity method was used. Other factors impacting VE negatively were related to hardware and software performance, where an individual needed to restart a laptop and, in another case, contact companies IT helpdesk for help. On one occasion, some challenges with additional monitors were faced. Communication and collaboration tools were mentioned among positively toned notes, describing Microsoft Teams (generally used as an internal communication tool in the company) as efficient and easy to use for instant messaging, holding virtual meetings, and for general collaboration.

The last sub-component in the work environment is **well-being at work (WB)**, which was formed through key elements: work-life balance, general well-being, job satisfaction, and appreciation. The work-life balance was mostly mentioned with a negative tone and included notes related to working overtime due to working full time from home, resulting in having less time for sports activities, need to take care of other family members, and having meetings after work hours.

"This week has been very busy with several recurring tasks and adhoc tasks as well. I had to do overhours. And didn't have as much time to eg. do sports as normally." (Response 16)

On one occasion, an individual also worked during the holiday week to catch up on messages and e-mails. There were also positively toned notes related to work-life balance, for example,

it was mentioned that home-based work allows balancing time between work and personal tasks, saving time on commuting and using the time for leisure activities.

"I managed to balance work and private life nicely and was very happy that they opened swimming pools as part of covid measures relaxation." (Response 20)

Notes related to general well-being were mainly negatively toned and included physical or mental distress mentions. On many occasions, feelings of pain in the shoulders or back were mentioned, caused by uncomfortable working conditions.

"No proper office equipment, leading to discomfort and back-pain."

Stress was mentioned in relation to heavy workload, lack of resources, personal issues, cooperation with colleagues, issues related to the virtual environment, or dealing with different tasks at the same time. Missing out on lunch and shorter breaks was a couple of times mentioned, impacting general well-being negatively.

To summarize, based on the results of the study, employees' evaluation of the work environment and self-leadership varies depending on the available features at home, the nature of work, and the general practicalities individual uses for their work. The general rating on working week remained high during the study period, however, it fluctuated between persons, which is explained by the key elements and tone of the responses. The self-leadership component is positively triggered mostly by practicing goal-setting, acknowledging achievements, and keeping focus. The work environment is negatively mentioned mainly from the perspective of workplace ergonomics, work-life balance, and organizational routines and habits.

2.3. The relationship between home-based work environment and employees' self-leadership

It became evident from the theoretical framework of this paper that while a high level of self-leadership contributes to personal job success and individual level development, the enabling factors, specifically from the work environment, have not been the interest of research topics. In addition, ICT-enabled workers in the self-leadership context have not been widely researched but are in the interest of this Master's thesis. This subchapter elaborates on the relationship between self-leadership and the work environment. Author incorporates

theory from the first chapter of the thesis to the findings of the empirical study and describes the relations between the areas.

Little evidence can be found on self-leadership relationship to a home-based work environment from the research investigating daily self-leadership and playful work design by Bakker (2021), the research hypothesizes and proves that daily self-leadership is positively related to daily job performance through basic psychological needs. Bakker emphasizes that self-leadership strategies are important while working from home because features that normally characterize employees' work are not available, thus, to create challenges, employees need to use the self-goal setting and take the initiative.

Master's thesis at hand has covered three different quantitative measurement scales, two of them concentrating on self-leadership skills and third on the work environment changes and self-leadership practices impact on productivity (see subchapter 1.2.). While these measurements don't cover the relationship between self-leadership and work environment, they give a good input and theoretical background to explore the relationship. During the thematic analyses of the response data, author observed that despite the question asked to describe certain component, often the response covered aspects from other components. This was partly expected as also seen in table 3 in the subchapter 2.1. To get a sense of direction, author created table 5 based on the response data to see the presence of components and sub-components in diary open-ended questions.

Table 5

Presence of components and sub-components in diary questions

Component and sub-component	Describe your physical working environment.	Describe your well-being during the past week.	Describe your working practices during the week.	Evaluate the virtual environment during the past week.	Grand Total
Self-management	**3**	**38**	**60**	**-**	**101**
Individual work practices (IWP)	1	12	40	**-**	53
Productivity (P)		17	9	**-**	26
Self-monitoring (SM)	1	4	11	**-**	16
Self-reinforcement (SR)	1	5		**-**	6
Work environment	**63**	**31**	**23**	**29**	**146**
Physical environment (PE)	56	3	3	**-**	62
Social environment (SoE)	1	6	17	**-**	24
Well-being at work (WB)	5	22	3	**-**	30
Virtual environment (VE)	1	**-**	**-**	29	30
Grand Total	**66**	**69**	**83**	**29**	**247**

Source: Created by the author based on study results.

It can be seen on table 5 that work environment and self-leadership is mentioned together in three of the questions. With this direction, author is able to further look into the responses individually but also the responses as a whole to understand and explain the relationship between the components. Further, author interprets the findings from the subchapter 2.2. to theoretical frameworks discussed in the chapter 1 of the paper to explain the relationship between work environment and self-leadership, see table 6.

Table 6

Self-leadership and work environment relationship

		Self-leadership			
		Individual work practices	**Productivity**	**Self-monitoring**	**Self-reinforcement**
Work environment	**Physical environment**	Atmosphere Concentration Distractions Ergonomics	Concentration Utilizing capabilities	Keeping focus Distractions	Atmosphere Ergonomics
	Social environment	Autonomy Goals Ways of working Organizational routines and habits	Ways of working Organizational routines and habits	Engagement Goals	Positive emotions Mental state
	Virtual environment	Communication Collaboration Information Technology	Quality Communication Collaboration Information Technology	Awareness of thoughts Goals Keeping focus	Reward Atmosphere Positive emotions
	Well-being at work	Work-life balance Conflicts	Efficiency Work-life balance Achieving results and goals	Keeping focus Engagement Awareness of thoughts	Reward Positive self-talk Mental state

Source: Created by the author based on Mezo (2008), Palvalin (2017), and collected data.

The author describes the relationship between self-leadership and work environment components using keywords. The physical work environment (PE) should provide concentration space, ergonomic features, and a relevant atmosphere for working. These features can be enabled and improved through individual work practices (IWP), such as controlling interruptions, setting up a comfortable working area, and actively seeking better tools and ways of working (Houghton et al., 2012). While productivity (P) is generally considered an outcome of good self-leadership skills and is supported by the work environment (Palvalin, 2017), the author finds that good physical environment can be triggered by productivity through, for example, utilization of available PE features in a productive manner. Likewise, if PE enables concentration, the level of productivity, e.g., quality of work increases. Self-monitoring (SM) component expects employees to be aware of their surroundings and track progress. Good physical environment may contribute to self-monitoring when distractions are eliminated from PE, lowering the need for continuous SM, on the other hand, SM helps to detect distractions and allows keeping focus (Palvalin et al., 2017). Lastly, the self-reinforcement (SR) component expects individuals to engage in natural rewards, e.g., positive self-talk, however, the reward may also be physical, like improved atmosphere and conditions (Harari et al., 2021).

The social environment (SoE) comprises factors provided through attitudes, autonomy, routines, and policies in the company. It allows an employee to incorporate new ways of working, take autonomy, turn high-level goals into individual goals, take up organizational routines and habits, and translate these to individual work practices. In return, the SoE in the company can be revised and improved. Additionally, adopted behaviors from SoE contribute to the productivity through the organizational level routines, like planning and meeting practices (Palvalin et al., 2015). Productivity reflects and forms the SoE as essentially, SoE includes the culture which is likely to be formed through employees. The SoE and self-monitoring are related in terms of tracking goals and being engaged. Through self-monitoring, the employee engages in internal control, tracks goals, and increases awareness or commits to the social environment set by the company. In the self-reinforcement phase, employees engage in self-reward, experiencing positive emotions, and setting the right mental state, SoE supports these actions by attitudes that employees commonly share in the company (Palvalin et al., 2015). For example, if rewarding or having positive attitudes toward achieved goals is generally practiced in the company, it gives the employee support and feelings of belonging.

The author finds that the virtual environment (VE) is much related to the self-leadership component. VE can provide the means for good collaboration, communication, and sharing of information to enable individual work practices. Through IWP, individuals can incorporate VE into their daily practices with hardware and software usage as well as improve the virtual environment with continuous error and trial. Employees' productivity can be greatly formed through the usage of VE capabilities, for example, speed, efficiency, and quality of work (Palvalin et al., 2015). On the flip side, the productivity component expects the individual to be proactive in utilizing skills or available features of the VE. Rewarding oneself could also be practiced virtually, for instance, after successfully completing a work task, some may find playing games or watching videos online a rewarding action. Virtual environment may contribute to self-reinforcement through the quality of the VE, well working tools and systems could trigger positive thinking toward work tasks.

The well-being at work (WB) is another component generally considered as an outcome of work environment and self-leadership (Palvalin, 2017), however, good general employee well-being may contribute to improvements in both. Namely, by practicing IWP, individual can improve work-life balance and eliminate conflict, which in poor conditions would affect persons' well-being negatively. Similarly, productive ways of approaching work improve employees' work-life balance, whereas good WB helps achieve results and goals and improve efficiency. The author finds most relations between SM and WB components. An employee continuously monitoring their thoughts and level of focus at work can detect errors in their behavior and, through actions, correct oneself to be more committed to their work. Likewise, an individual with less stress and anxiety is more easily capable of acknowledging the self-monitoring process in their behavior(Goldsby et al., 2021). Lastly, by enforcing oneself to positive thinking or rewarding, employees' well-being can be enhanced, in addition, individuals' mental state can be improved through self-reinforcement, leading to improved general well-being.

To summarize, as prior research and literature hasn't covered the self-leadership and work environment relationship directly, the author of the thesis finds that there is no clear one-to-one relationship between the components of self-leadership and work environment. One doesn't fully eliminate the other, but they can supplement each other. Work environment can provide the conditions for a good self-leadership process, and from the leadership perspective, work environment can be used to monitor, correct, and improve oneself.

2.4. Conclusions and recommendations on the relationship between work environment and self-leadership

In the previous subchapter, the author opened and explained the study's results through the work environment and self-leadership components and has incorporated the learnings with theory into a relationship table in the subchapter 2.3. This subchapter of the empiric study sets conclusions on the work environment and self-leadership, proposes recommendations for consideration, and elaborates on the coexistence and relationship between the work environment and self-leadership components.

It was found that the self-leadership components occurred in the responses mainly with a positive tone, author concludes that the sample of the study has acquired a reasonable level of self-leadership skills and incorporates these into their daily working practices. More precisely, the total count of positive tones regarding individual work practices explains that the study sample is mindful of setting individual goals and how they manage their daily work. In addition, it becomes evident from the responses that employees acknowledge achievement at work through statements of completing planned work tasks and being realistic about the amount of work one can pick up. Regarding performance, it is concluded that the positive feedback on an individual or team level contributes to self-leadership as an improving factor due to the acknowledgment of positive thoughts triggered by the input. The study results also imply that employees engage in self-monitoring and rewarding, namely being aware of the need to keep focus and rewarding oneself upon successfully completing the tasks. Regarding negatively keyed elements in the self-leadership component, it is found that despite that the team level planning gives a number of items to complete for the individual, one should further set and prioritize the tasks in a way that suits his ways of working - in other words, taking the ownership and planning from team to the individual level. On some occasions, individuals didn't engage in self-goal setting on a weekly basis, implying that such practice would get easily unorganized. In the self-leadership framework, this indicates to low level of IWP. Moreover, unnecessary meetings or discussions organized by someone else were mentioned in relation to inefficiency. These could be eliminated through self-leading actions, for example, making sure what is exactly the scope of the meeting and how the individual is expected to contribute.

Based on the conclusions of the self-leadership component, the author of the thesis finds that these results are also related to the work environment, namely the social environment that introduces organizational routines, habits, and ways of working, which employees usually adapt by themselves or are forced to do so. For example, the goal-setting

practice on an individual level may be triggered by the company and team-level goal-setting. It is known to the author that within the study sample, company-level goals are being set yearly, and on a team level, quarterly and bi-weekly targets are set. Additionally, the virtual environment contributes to the practice by providing the software to track the goals. Most of the respondents in this study group belong to teams where Atlassian Jira is used to plan and track goals, and on individual-level MS Outlook or OneNote is used. Statements regarding the virtual environment didn't expose major flaws for the employees, hence author concludes that the sample is well experienced with the usage of ICT and can seek help or fix occurring issues quite easily.

Regarding meeting practices, the author concludes that those are likely to be inherited from the social environment and could be related to the need to share or get information. This is confirmed by the negative notes found from the responses associated with the organizational routines and habits. The results explain that employees often have too many meetings, and it becomes hard to find time for individual work and concentration, therefore they are losing focus due to multi-tasking. In addition, most of the study participants are part of cross-functional teams, which may cause the need for many meetings. The author interprets through participant observation that due to the WfH practice, some individuals tend to organize meetings with stakeholders instead of using instant messaging or e-mails.

The work environment component in the research resulted in mainly negatively toned statements. It was found that the physical environment causes discomfort for the employees in the home-based work environment, primarily the ergonomic features. While the office environment on employers' premises usually has better features and capabilities, as also mentioned by some of the respondents who attended office on a couple of occasions during the study period, the home office often lacks these features. Namely, ergonomic equipment was brought out in many of the responses, author concludes that despite the pandemic having lasted for two years, forcing people to work from home, not many have invested in equipment at home. In addition, eliminating distractions is not always possible, for example, when employees don't have a dedicated room at home for working. The author finds that through the self-leadership process, such issues could be acknowledged and or eliminated either fully or partially as the environment is an individuals' home, which enables adjusting based on its advantages and disadvantages for that individual. Company X has not set strict post-pandemic WfH practices based on observed information. It is up to teams and divisions to agree on the practicalities, and each individual may decide by themselves how often they attend the employers premises or work from home. Therefore, the author concludes that the

study sample has the freedom and autonomy to choose based on their ways of working and individual needs – this can be directly associated with the self-leadership theory that expects individuals to have autonomy and utilize new ways of working.

In terms of recommendations, the author recommends based on the finding in subchapter 2.3 engaging in self-leading practices and consistently developing oneself in the area. It is known to the author that some employees, who participated in the survey, have previously attended training that help to improve self-leadership skills, however, these have been one-time trainings with no follow-up. In addition, company X has mainly targeted managerial level employees when planning leadership training. The author suggests introducing self-leadership training programs also into the lower level. In addition, all of the study participants are part of some team, therefore, approaching the topic collectively would also improve the overall benefit of self-leadership at a company level. The collective approach would enable better continuous learning and development of skills (Goldsby et al., 2021). Moreover, the author suggests considering investing in proper equipment at home. An ergonomic chair and table can be quite costly for the employees, but it would be a one-time purchase and last for a long time. The company could also consider covering the costs to some extent as the need for office space and equipment can be reduced by employees WfH. Additionally, the author suggests collectively working and improving organizational routines and habits, specifically revisiting meeting practices and need. To reduce the increase in technostress and the feelings of always having to be available virtually (Harris et al., 2021), individuals could practice turning off notifications or using the "do not disturb" function in the communication tools.

The author of the study was not able to find previous studies or theoretical frameworks directly related to the aim of the thesis but finds the topic to be very relevant in the future, considering the increase of telework. To be noted that this research also included some limitations, namely the study was conducted under the Covid-19 circumstance, where participants were guided primarily to work from home by the employer. In addition, the population of the study was selected from one company and essentially working for the same divisional targets, therefore the results and conclusions should not be generalized. For the purpose of comparison, author recommends studying the relationship in the employer premises and when the pandemic restrictions have been lifted. In addition, further research could also consider studying the impact of self-leadership to work environment and *vice versa*.

In conclusion, the work environment and self-leadership skills can collectively contribute to the quality of work and general well-being of individuals while WfH. However, the home-based work environment may introduce many obstacles for employees but in return also offers benefits. Based on the research, it becomes apparent that individuals are willing to trade off better features with the comfort, flexibility, and time-saving aspects of WfH. Despite the understanding and level of engagement in self-leadership vary among individuals, each person practices the process either consciously or subconsciously, therefore, with the right approach, employees may benefit and improve their work and surroundings to their level of need.

Summary

Working from home is a work arrangement where the work tasks are performed in employees' place of residence utilizing information and communication technology. WfH introduces advantages and disadvantages derived from the work environment and the way individual organizes own work. WfH was steadily growing trend among employees during the past 15 years until global pandemic Covid-19 forced experiment changed the attitudes and views on WfH significantly through pandemic-infused learnings.

Recent studies imply that WfH is a new norm due to the investments done by the companies and employees to physical, human, and organizational capital as well as the time savings from commuting, and less spending on food, shopping, and entertainment near working places. The advantages of WfH are its flexibility, savings in time and money, comfort, better work-life balance, and more autonomy. Whereas the consequences can be physical distress, technostress, social isolation, and presenteeism. The advantages and disadvantages of WfH can be created by the work environment or individual self-leadership skills.

The home-based work environment can be divided into three dimensions, first the physical environment which is the workspace that should enable doing different tasks, have low number of distractions, and offer ergonomic features. Second, the virtual environment includes of hardware and software used to execute work tasks, access information, communicate, and collaborate with stakeholders. Lastly, the social environment combines organizational aspects like clear goals and policies, autonomy, organizational routines and habits, and support from colleagues and management.

Self-leadership is a process where individual leads oneself through self-monitoring, self-evaluating, and self-reinforcement. It provides a set of strategies that individual can

engage in. The behavior-focused strategies, that is about observing and identifying one´s behavior, natural reward strategies incorporate rewarding and pleasant features to the task itself, and the constructive thought patterns that challenge dysfunctional thoughts toward positive thinking.

While the impact of WfH and self-leadership on individual has been separately studied from different perspectives, the relationship between the home-based work environment and self-leadership in the context of WfH has not been interest of academic literature and studies. This Master´s thesis focused on observing the definitions, features and outcomes of work environment and self-leadership, and examined the relationship between the terms. The author conducted exploratory research among ICT-enabled workers using diary and participants observation research methods to collect qualitative data. Based on the analysis of the data, the author set conclusion and proposed recommendations.

The research shows that the sample of the study has acquired reasonable level of self-leadership skills to manage their own work-related responsibilities while WfH. However, there are signs of improvement need specifically in the self-leadership process, in specific setting individual goals and managing own working time and engagement to ad-hoc tasks, discussions, or meetings. It was found that social and virtual environment are likely to be connected to these self-leadership skills. The author suggests engaging to self-leadership process through individual learning or collective trainings in the company.

The work environment exposed issues mainly from the physical environment, namely the ergonomics of the workspace and change of location to be able to concentrate or have virtual meetings. The social environment causes disturbance for individuals due to organizational routines and habits, mainly the meeting practices and ad-hoc requests, meetings, discussions taking the focus off from planned work tasks. It was concluded that the work environment can be formed through self-leadership process. The author recommends investing in ergonomic tools in home environment, that could partly be covered by the company.

This Master´s thesis was compiled during the Covid-19 related restriction where WfH was a suggested form of working therefore the conclusions and implications done may also be triggered by the regulations. For comparability purposes, additional research could be done on this matter when the restrictions have been fully lifted. In addition, the work environment and self-leadership relationship and interaction could be further studied taking into account socio-demographic features.

List of references

1. Aczel, B., Kovacs, M., van der Lippe, T., & Szaszi, B. (2021). Researchers working from home: Benefits and challenges. *PLOS ONE*, *16*(3), e0249127. https://doi.org/10.1371/journal.pone.0249127

2. Aksoy, C. G., Barrero, J. M., Bloom, N., Davis, S. J., Dolls, M., & Zarate, P. (2022). *Working From Home Around the World*. 10.

3. Bakker, A. B., Breevaart, K., Scharp, Y. S., & de Vries, J. D. (2021). Daily Self-Leadership and Playful Work Design: Proactive Approaches of Work in Times of Crisis. *The Journal of Applied Behavioral Science*, 002188632110604. https://doi.org/10.1177/00218863211060453

4. Bao, L., Li, T., Xia, X., Zhu, K., Li, H., & Yang, X. (2021). How does Working from Home Affect Developer Productivity? -- A Case Study of Baidu During COVID-19 Pandemic. *ArXiv:2005.13167 [Cs]*. http://arxiv.org/abs/2005.13167

5. Barrero, J. M., Bloom, N., & Davis, S. J. (2021). *Why Working from Home Will Stick* (Working Paper No. 28731; Working Paper Series). National Bureau of Economic Research. https://doi.org/10.3386/w28731

6. Baruch, Y., & Holtom, B. C. (2008). Survey response rate levels and trends in organizational research. *Human Relations*, *61*(8), 1139–1160. https://doi.org/10.1177/0018726708094863

7. Bloom, N., Liang, J., Roberts, J., & Ying, Z. J. (2015). Does Working from Home Work? Evidence from a Chinese Experiment*. *Quarterly Journal of Economics*, *130*(1), 165–218. https://doi.org/10.1093/qje/qju032

8. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

9. Breevaart, K., Bakker, A. B., Demerouti, E., & Derks, D. (2016). *Who takes the lead? A multi-source diary study on leadership, work engagement, and job performance*. https://doi.org/10.1002/job.2041

10. Dan Price. (2022, March 15). We asked our employees where they want to work: 7% want to go to the office full time 31% want an office-remote hybrid 62% want to work only from home So I told them: Sounds great. Do whatever you want. As a CEO, what do I care? If you get your work done, that's all that matters [Tweet]. *@DanPriceSeattle*. https://twitter.com/DanPriceSeattle/status/1503765177279426574

11. Davis, K. G., Kotowski, S. E., Daniel, D., Gerding, T., Naylor, J., & Syck, M. (2020). *The Home Office: Ergonomic Lessons From the "New Normal."* https://journals.sagepub.com/doi/full/10.1177/1064804620937907

12. *Diary Studies: UX Research Methods for Discovery*. (n.d.). Retrieved January 31, 2022, from https://www.userinterviews.com/ux-research-field-guide-chapter/diary-studies

13. Dingel, J. I., & Neiman, B. (2020). How many jobs can be done at home? *Journal of Public Economics*, *189*, N.PAG-N.PAG. https://doi.org/10.1016/j.jpubeco.2020.104235

14. *Employment—Annual statistics*. (2021, April). https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Employment_-_annual_statistics

15. European Framework Agreement on Telework. (2002). *European Framework Agreement on Telework. Retrieved from: Https://resourcecentre.etuc.org/sites/default/files/2020-09/Telework%202002_Framework%20Agreement%20-%20EN.pdf.*

16. Ghosh, K. (2015). Developing organizational creativity and innovation: Toward a model of self-leadership,employee creativity,creativity climate and workplace innovative orientation. *Management Research Review*, *38*(11), 1126–1148. https://doi.org/10.1108/MRR-01-2014-0017

17. Goldman Sachs: Bank boss rejects work from home as the "new normal." (2021, February 25). *BBC News*. https://www.bbc.com/news/business-56192048

18. Goldsby, M. G., Goldsby, E. A., Neck, C. B., Neck, C. P., & Mathews, R. (2021). Self-Leadership: A Four Decade Review of the Literature and Trainings. *Administrative Sciences*, *11*(1), 25. https://doi.org/10.3390/admsci11010025

19. Harari, M. B., Williams, E. A., Castro, S. L., & Brant, K. K. (2021). *Self-leadership: A meta-analysis of over two decades of research*. https://doi.org/10.1111/joop.12365

20. Harris, K. J., Harris, R. B., Valle, M., Carlson, J., Carlson, D. S., Zivnuska, S., & Wiley, B. (2021). Technostress and the entitled employee: Impacts on work and family. *Information Technology & People*, *ahead-of-print*(ahead-of-print). https://doi.org/10.1108/ITP-07-2019-0348

21. Houghton, J. D., & Neck, C. P. (2002). The revised self-leadership questionnaire: Testing a hierarchical factor structure for self-leadership. *Journal of Managerial Psychology*, *17*(8), 672–691. https://doi.org/10.1108/02683940210450484

22. Houghton, J., Dawley, D., & DiLiello, T. (2012). The Abbreviated Self-Leadership Questionnaire (ASLQ): A More Concise Measure of Self-Leadership. *International Journal of Leadership Studies*, *7*, 216–232.

23. Houghton, & Jinkerson, D. L. (2007). Constructive Thought Strategies and Job Satisfaction: A Preliminary Examination. *Journal of Business and Psychology*, *22*(1), 45–53. https://doi.org/10.1007/s10869-007-9046-9

24. Knotts, K. G., & Houghton, J. D. (2021). You can't make me! The role of self-leadership in enhancing organizational commitment and work engagement. *Leadership & Organization Development Journal*, *42*(5), 748–762. https://doi.org/10.1108/LODJ-10-2020-0436

25. Mack, N., Family Health International, United States, & Agency for International Development. (2005). *Qualitative research methods: A data collector's field guide*. http://www.fhi360.org/sites/default/files/media/documents/Qualitative%20Research%20Methods%20-%20A%20Data%20Collector's%20Field%20Guide.pdf

26. Mann, S., & Holdsworth, L. (2003). The Psychological Impact of Teleworking: Stress, Emotions and Health. *New Technology, Work and Employment*, *18*, 196–211. https://doi.org/10.1111/1468-005X.00121

27. Manz, C. C. (1986). Self-Leadership: Toward an Expanded Theory of Self-Influence Processes in Organizations. *Academy of Management Review*, *11*(3), 585–600. https://doi.org/10.5465/amr.1986.4306232

28. Manz, C. C., & Sims, H. P. (1986). Leading Self-managed Groups: A Conceptual Analysis of a Paradox. *Academy of Management Review*, *7*(2), 141–165. https://doi.org/10.1177/0143831X8672002

29. Manz, C. C., Sims, H. P., & Jr. (1980). Self-Management as a Substitute for Leadership: A Social Learning Theory Perspective. *Academy of Management Review*, *5*(3), 361–368. https://doi.org/10.5465/AMR.1980.4288845

30. Messenger, J. (2019). Introduction: Telework in the 21st century – an evolutionary perspective. In J. Messenger, *Telework in the 21st Century* (pp. 1–34). Edward Elgar Publishing. https://doi.org/10.4337/9781789903751.00005

31. Messenger, J., Vargas Llave, O., Gschwind, L., Boehmer, S., Vermeylen, G., & Wilkens, M. (2017). *Working anytime, anywhere: The effects on the world of work*. http://eurofound.link/ef1658

32. Mezo, P. (2008). The Self-Control and Self-Management Scale (SCMS): Development of an Adaptive Self-Regulatory Coping Skills Instrument. *Journal of*

Psychopathology and Behavioral Assessment, *31*, 83–93.
https://doi.org/10.1007/s10862-008-9104-2

33. Miller, S. (2020, September). *Is It Time for Employers to Reimburse Remote Workers'*
Expenses? https://www.shrm.org/resourcesandtools/hr-
topics/benefits/pages/employers-may-overlook-reimbursing-remote-work-
expenses.aspx

34. Nilles, J. (1975). Telecommunications and Organizational Decentralization. *IEEE*
Transactions on Communications, *23*(10), 1142–1147.
https://doi.org/10.1109/TCOM.1975.1092687

35. Nilles, J. (1988). Traffic reduction by telecommuting: A status review and selected
bibliography. *Transportation Research Part A: General*, *22*(4), 301–317.
https://doi.org/10.1016/0191-2607(88)90008-8

36. Palvalin, M. (2017). How to measure impacts of work environment changes on
knowledge work productivity – validation and improvement of the SmartWoW tool.
Measuring Business Excellence, *21*(2), 175–190. https://doi.org/10.1108/MBE-05-
2016-0025

37. Palvalin, M., van der Voordt, T., & Jylhä, T. (2017). The impact of workplaces and
self-management practices on the productivity of knowledge workers. *Journal of*
Facilities Management, *15*(4), 423–438. https://doi.org/10.1108/JFM-03-2017-0010

38. Palvalin, M., Vuolle, M., Jääskeläinen, A., Laihonen, H., & Lönnqvist, A. (2015).
SmartWoW – constructing a tool for knowledge work performance analysis.
https://doi.org/10.1108/ijppm-06-2013-0122

39. Ratheeswari, K. (2018). *Information Communication Technology in Education*. 3.
https://doi.org/10.21839/jaar.2018.v3iS1.169

40. Ratz, N., Reibenspiess, V., & Eckhardt, A. (2021). The Secret to Remote Work—
Results of a Case Study with Dyadic Interviews. *Hawaii International Conference on*
System Sciences 2021 (HICSS-54). https://aisel.aisnet.org/hicss-
54/cl/social_and_psychological_perspectives/5

41. Saad, L., & Wigert, B. (2021, October 13). *Remote Work Persisting and Trending*
Permanent. Gallup.Com. https://news.gallup.com/poll/355907/remote-work-
persisting-trending-permanent.aspx

42. Stewart, G. L., Courtright, S. H., & Manz, C. C. (2011). Self-Leadership: A
Multilevel Review. *Journal of Management*, *37*(1), 185–222.
https://doi.org/10.1177/0149206310383911

43. Vargas-Llave, O., Mandl, I., Weber, T., & Wilkens, M. (2020). *Telework and ICT-based mobile work: Flexible working in the digital age*. 66.

Appendices

APPENDIX A. Abbreviations

Abbreviation	Concept
ICT	Information and communication technologies
IWP	Individual work practices
P	Productivity
PE	Physical environment
SE	Self-evaluating
SM	Self-monitoring
SoE	Social environment
SR	Self-reinforcement
WB	Well-being at work
VE	Virtual environment
WE	Work environment
WfH	Working from home

Source: Created by the author, based on (Bao et al., 2021; Mezo, 2008; Palvalin et al., 2017)

Resümee

KODUST TÖÖTAMINE: TÖÖ KESKKONNA JA TÖÖTAJA ENESEJUHTIMISE
VAHELISED SEOSED IKT-PÕHISE TÖÖ NÄITEL

Kertu Mürgimäe

Kodust töötamine on töövorm kus töötaja töötab väljaspool tööandja tööruume ühel või mitmel päeval nädalas, kas töötaja kodus või mõnes muus kohas, kasutades informatsiooni ja kommunikatsiooni tehnoloogiat. Antud töövormi peamisteks eelisteks on paindlikkus, parem töö ja eraelu tasakaal, transpordile kuluva aja ja raha säästmine ning autonoomia. Peamisteks puudusteks nimetatakse üldiselt töö ja eraelu piiride hägustumist, ergonoomiliste töövahendite puudumine, sotsiaalne isoleeritus, kõrgem vajadus enesejuhtimisele. Kuigi kodust töötamist on praktiseeritud juba varasemalt siis Covid-19 pandeemiast õpitu käigus on vaated sellele töövormile drastiliselt muutunud. Eelnevad uuringud sel teemal on peamiselt keskendunud töötaja produktiivsusele või üldistavalt kodusest keskkonnast tulenevatele eelistele ja puudustele, vähem on uuritud seoseid töökeskkonna ja töötaja enesejuhtimise vahel kodust töötamise hetkel.

Töökeskkonda võib üldiselt jaotada kolme dimensiooni: füüsiline, sotsiaalne ning virtuaalne. Füüsiline töökeskkond viitab töökohale ja selle ergonoomsusele, sotsiaalne töökeskkond hõlmab endas organisatsiooni ja juhtimisega seotud aspekte nagu eesmärgid, kultuur ja üldised töö praktikad ettevõttes. Virtuaalne töökeskkond koosneb tööks vajaliku ja kasutuses olevat tehnoloogiat.

Enesejuhtimine on enese hindamise ja mõjutamise protsess mille mõjul inimene saavutab suuna ja motivatsiooni töö ülesannete täitmiseks ilma välise abita. See hõlmab endas strateegiaid, mille käigus inimene jälgib ja muudab oma käitumist läbi premeerimise või konstruktiivsete mõttemustrite.

Antud magistritöö käsitleb töökeskkonna ja enesejuhtimise definitiooni, mõjutavate tegurite ja järelmite teoreetilisi aluseid ning uurib nende omavahelisi seoseid. Töö autor viis läbi avastusliku uurimuse kasutades päeviku ja osaleva vaatluse meetodit. Uurimuse valimiks oli peamiselt kodust töötavad ja informatsiooni ja kommunikatsiooni tehnoloogiat kasutavad töötajad. Uurimuse kestus oli üks kuu, mille vältel oodati osalejatelt iganädalasi sissekandeid päevikusse. Sissekanded hõlmasid hinnangut töönädalale, töökeskkonnale ning individuaalsetele töö praktikatele ja heaolule.

Uurimusest selgus, et antud valim praktiseerib enesejuhtimise protsessi võrdlemisi heal tasemel, teadvustades eesmärkide seadmise ja saavutamise olulisust. Kodune töökeskkond seevastu tõi esile probleeme peamiselt füüsilisest ja sotsiaalsest keskkonnast. Uurimustulemustele ja teooriale tuginedes koostas autor töökeskkonna ja enesejuhtimise vaheliste seoste maatriksi, mis aitas teha järeldusi ja ettepanekuid. Autor järeldab, et töökeskkonnast tulenevaid probleeme on võimalik läbi enesejuhtimise märgata ja korrigeerida. Samal ajal ilmnes tulemustest, et töökeskkonnal, eriti sotsiaalsel ning virtuaalsel töökeskkonnal on otsene seos enesejuhtimisega. Näiteks selgus, et koosolekute pidamise praktikad ning eesmärkide seadmine on otseselt seostatav organisatsiooni rutiini ja harjumustega ning avaldavad mõju individuaalsele enesejuhtimisele.

Käesolev magistritöö koostati ajal mil kodust töötamine oli tungivalt soovituslik Covid-19 pandeemiast tulenevalt. Seetõttu võivad uurimuse tulemused olla mõjutatud sunnitud kodus töötamisest.

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WORKING FROM HOME: THE RELATIONSHIP BETWEEN WORK ENVIRONMENT AND EMPLOYEES' SELF-LEADERSHIP ON THE EXAMPLE OF ICT-ENABLED WORK

supervised by professor Maaja Vadi and associate professor Eneli Kindsiko

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