LAPIN AMK

Lapland University of Applied Sciences

THE IMPACT OF AN ACCELERATED DIGITALIZATION
ON PRODUCTIVITY

*Investigating the effects of an accelerated digitalization due
to the COVID-19 outbreak on employees' productivity*

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Abstract of Thesis

Digital Business Management
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The COVID-19 pandemic had accelerated digital transformation, which has become an integral part of society and the survival of companies, a requirement of the modern world. Reacting to changes related to the pandemic required leadership skills from managers. Difficult decisions have been made in every organization, but the coronavirus has pushed decision making to the limit.

This thesis is a case study where the research data was collected utilizing semi-structure interviews and managers of different departments within the case study were interviewed. The common perception of managers and employees on digitalization is that it brought many opportunities and benefits to employees' productivity. The accelerated digitalization has been appreciated and was received as important and necessary. Digitalization brought better ways of communication and increased transparency, which made it possible for employees to work more effective. New digital tools allowed better business processes.

Nevertheless, digitalization had its minuses such as limited social interaction. Dependency on technology had increased causing a risk in maintaining work flow. From social perspective, employees found it difficult to disconnect from work. By that, it was meant work-life balance was affected.

Based on the research outputs, digitalization has had a positive effect on employees' productivity working in service organizations (case study: Region Stockholm).

CONTENTS

ABBREVIATIONS

AI	Artificial Intelligence
B2B	Business to business
COVID-19	Coronavirus disease 2019
IoT	Internet of Things
IRL	In real life
PwC	Pricewaterhouse Coopers
WFH	Working from home

1   INTRODUCTION

In this chapter, the reader will find a detailed motivation and background to the chosen topic, followed by a knowledge base where there is relevant theory related to the topic. Additionally, the research question and the purpose of this study are presented. Finally, the methodological implementation and a brief description of the chosen case study are described in this chapter.

1.1   Motivation and background

During the last pandemic that started in late 2019 caused by a virus known as COVID-19, many organizations were affected, and the range of different measures such as social distancing, lockdown and quarantines have forced many businesses to adapt at short notice (Amankwah-Amoah, Khan, Wood, & Knight, 2021). An investigation from Eurofound suggests that around 30-40% of employees in different European countries started working remotely since the Covid-19 outbreak (Eurofound 2020). This was a reason why the use of technology and digitalization became a noticeably big phenomenon. That increased digitization has impacted businesses, organisations and individuals in the way they operate (United Nations, 2021). It has been an obvious trend towards digitalization of business where commercial activities went from being physical to online outlets (Rachinger, Rauter, Müller, Vorraber & Schirgi, 2018).

Sweden has not been an exception, and as in many countries around the world, Swedish private companies and public agencies have been affected by the pandemic. Many organizations and their employees had to face big challenges in their environment and normal work practices. To decrease the spread of Covid-19, many businesses decided to let their staff work remotely which involved a drastic movement towards digital platforms where companies and customers had to adapt to new forms of interaction (Amankwah-Amoah, et.al 2021).

According to Amankwah-Amoah, et al., (2021), the COVID-19 pandemic and the increased digitization which came with it have impacted businesses and organizations in unprecedented ways. Many actors realized the need for change across industries, but also changing customer behaviour. Remote working has

become more acceptable, and many employers adopted it, leading them to a greater digitalization into their business models. However, there are still many conservative employers that view homeworking as something that is suited to a few elite workers. For that reason, they may want to go back to "normal" rapidly (Andersen & Kelliher, 2020).

Due to the increased digitalization that came during the COVID-19 era, the work environment in both private companies and public organizations has changed. The way of cooperation between companies and its employees has been affected, and aspects such as social encounters and business environments within companies and organizations have gone through big changes (Rachinger et al., 2018). The outbreak of COVID-19 has been challenging companies, and many of those have been forced to adopt new internal working practices (Almeida, Santos & Monterio, 2020). That is why a question about how this situation has impacted the employee´s productivity working in those places becomes interesting.

In addition to this, Galanti, Guidetti, Mazzei, Zappala & Toscano (2021) argue that one concern that many organizations have had due to remote work is job autonomy. Job autonomy positively influences remote worker´s engagement and satisfaction but it could negatively affect their stress since a lot of freedom can make individuals feel overwhelmed. Due to COVID-19, remote working had to be adapted as an organizational change without providing employees with the necessary skills required for that (Galanti et al., 2021). That is why the increased use of technology and social distance are aspects that have raised concerns about the impacts on employees working abilities in organizations.

According to Galanti et.al., (2021), there are several studies that have reported the advantages and disadvantages of the increased use of technology, but there are still other aspects that could be examined. One of those aspects is how an individual's working productivity might be affected by an accelerated digitalization such as the one caused by the outbreak of COVID-19.

Division of responsibilities within the thesis is being presented in the table below.

Table 1. Division of responsibility.

Chapter, point, task	Responsible author
INTRODUCTION	
Motivation and background Purpose, objectives and thesis question framing Methodological implementation Ethical foundations and reliability	Ortiz, J.
Knowledge base Schedule and required resources General structure of the thesis	Adamowicz, G.
THEORY	
Choice of literature examples	Ortiz, J. & Adamowicz, G.
RESEARCH DESIGN	
Research approach, methods & process	Adamowicz, G.
Case selection and description (if applicable) Data analysis**Error! Bookmark not defined.** Reliability and validity	Ortiz, J.
FINDINGS	Ortiz, J.
DISCUSSION	
Summary of the results Evaluation of the results: Validity, reliability and limitations	Adamowicz, G.

Conclusions and recommendations for future research	
Theoretical and practical implications	Ortiz, J.

1.2 Knowledge base

Digital transformation affects all areas of life. The use of modern technologies and the importance of the development of digital competences has been underlined by international organizations for many years, but the activities in this area so far have not brought revolutionary effects. The situation was radically changed by the last pandemic, which affected virtually all countries in the world, forcing, among others, the closure of schools and businesses, and hence the transfer of both education and work to the virtual space. The vision of the future, consisting in the digitization of education, happened almost overnight, and there is no turning back from these processes. In other words, the pandemic has accelerated the digital evolution in business and organizations. (Dutta, Jadav, Tanwar, Sarma & Pricop 2022).

As the outbreak of COVID-19 has transformed the work environment across many companies, this leaves questions about how it has affected people working in service organizations. In the context of this paper, service organizations are understood as per the definition provided by Bowen and Ford (2002), who state that service organizations offer or produce something that can be perceived, experienced and sensed, but cannot be seen, touched or held.

With no doubt, the COVID-19 outbreak can be seen as the great acceleration in a sense of accelerating the existing global trend towards embracing new technologies to facilitate remote working in service organizations (Lozada, 2020).

Having this in mind, there are some relevant concepts that relate to this research. In the first place, digitalization refers to the integration of digital technologies that lead to organisational, social and technical changes (Hult, Hansson & Gellerstedt, 2020). Since the study aims to investigate how employees' productivity might be

affected by digitalization, it is also important to have that as a concept. According to Nda & Fard—(2013), employee productivity refers to high satisfaction of customers and employees, providing a service with good quality, at the smallest possible cost, ensuring the highest level of production. This definition of the concept has not only an economic dimension, but also an approach with individual and social dimensions.

The context of this investigation, that is, where this research has been held is a service organisation. Therefore, productivity in service organisations becomes an important concept for this research. According to Rutkauskas and Paulavičienė (2005), productivity in service organisations is a more complicated task than in the manufacturing sector because it has a larger scope and involves an external element from the organizational position, which is the customer. For that reason, the quality in service organisations is very important.

Finally, the drivers of employees' productivity is also an important concept for this research because it aims to explain what kind of work-related aspects are important to employees and if there´s any relation between how those aspects affect employees and the rapid digitalization in the working place (Bedarkar and Pandita 2014).

1.2.1 Digitalization

According to Saarikko, Westergren & Blomquist (2020), the process of creating digitized products or systems in order to develop new organizational procedures, business environments or even commercial offerings is known as digitalization. In that sense, digitalization can be seen as the use of digital platforms or digital technologies such as cloud computing, smart phones, artificial intelligence (AI), Internet of Things (IoT), etc. Especially interesting is IoT, which means a network of physical objects - "things" - that are equipped with sensors, software and other technologies to connect and exchange data with other devices and systems via the Internet. (Greengard, 2015)

Digital technologies are no longer the innovation of companies that are boldly looking to the future and looking for effective ways to increase their

competitiveness. At the time of this research, the digitization of business was a necessity, and it has become evident that due to the outbreak of Covid-19, many firms had to start a transition to digital technology (Amankwah-Amoah, et al., 2021).

Sine many years back, a big number of companies and organizations have used internet technologies and computers, because digitalization is not exactly a new phenomenon in businesses. However, not all of them see how digitalization can facilitate many activities and how it equips organizations to improve overall competitiveness (Amankwah-Amoah, et al., 2021).

According to Amankwah-Amoah, et al., (2021), there are several drivers when organizations decide making changes and improvements regarding digitalization. One important driver is the shift to remote working. Remote working consists of performing the job from outside the office at a remote location. This is not something new and the possibility of working remotely has existed for many years, even though several firms had chosen not to adopt it, or just gave the possibility to only a few workers. Andersen and Kelliher (2020) argue that before the pandemic, there were still many organizations concerned about losing control of employees when they worked remotely. Here, there is also a trust issue by not believing that workers would exercise their autonomy correctly. However, nobody was expecting the outbreak of a dangerous virus and despite reluctance to remote work, the pandemic forced numerous companies and organizations to embrace new technologies and shift to remote work over a night (Amankwah-Amoah, et al., 2021).

In order to facilitate remote work for employees, companies and organizations started to develop new videoconferencing facilities and other tools that improved remote-working processes (Amankwah-Amoah, et al., 2021). According to them, the use of new platforms could also be seen as something positive since it can reduce bureaucracy, operational costs, commuting costs, etc., resulting in saving for employees.

Additionally, Parviainen et al. (2017) mean that digitalization leads to big changes in levels of the organisation. According to the writers, one of those changes is

collaboration between employees. To collaborate online without the need of physical encounters requires new competences from everyone involved. Furthermore, Amankwah-Amoah, et al. (2021) write that the use of new technologies lead to operational efficiency and optimization of the administrative work. At the same time, it improves the internal communication of the company since everybody might be more available online and it reduces the time required by employees to complete task due to automation.

However, Parviainen et al. (2017) argue that there are still several barriers to digitalization. First, companies and organizations were at different stages of implementation of digitization when the pandemic hit. For some of them, the digitalization process has been limited due to resource constraints or insufficient commitment by managers. While other companies might have had a smoother transition because they were better equipped, or it was easier for them to abandon old routines. In any case, the COVID-19 outbreak has impacted many organizations and accelerated their digitalization journey in unprecedent ways (Amankwah-Amoah et al., 2020).

1.2.2 Employees' productivity

The economic measure of output per input is called the employee productivity. In for-profit companies, employee productivity is also measured by the total number of employees divided by net sales (Ravi and Anulakshmi 2021). They also mean that employee productivity should always be taken as a priority for organizations because the success of it is dependent on the productivity of its personnel.

According to Hanaysha (2016), one of the most important objectives for service organizations is to improve employee productivity. The argument is that highly productive employees influence overall organizational performance. Employee productivity is an important factor for building organizational competitiveness, sustaining financial performance and achieving the desired goals (Hanaysha, 2016).

In a similar way, Hanaysha (2016) means that an important goal for numerous organizations is to make an efficient and effective utilization of human resources. In the short and the long way, it is something that is going to improve their efficiency and effectiveness. In addition, the writer argues that oftentimes, employee productivity is influenced by behavioural factors such as employee empowerment, teamwork and employee training (Hanaysha 2016).

According to (Ravi & Anulakshmi 2021), many companies that were directly affected by the introduced restrictions clearly decreased their productivity. The authors also state that COVID-19 and the lockdowns caused a lot of stress and many employees faced worries and fears. For instance, employees in advertising industry got very stressed due to lockdowns and social distancing and that influenced their working abilities negatively.

In their study, Ravi & Anulakshmi (2021) also mention that employees working in knowledge-based industries, with not so many face-to-face interactions and a high level of independence, it was easier to switch to remote work. However, in those industries where there are many interactions with customers, the productivity of employees was more limited.

Kramer & Kramer (2020) also highlight the differences between the type of occupations and how in many cases some occupations are better suited for remote work. For many occupations, it is the nature of work which determines the level of productivity that workers will be able to have from home. In that sense, companies providing services that could be performed remotely were not affect by restrictions as hard as other organizations. In order to not succumb to the effects of the pandemic and the ongoing restrictions, many organizations were forced to take in new policies to ensure the welfare of its employees and good conditions of working. Nevertheless, COVID-19 was a great accelerator towards embracing more flexible and modern technologies (Amankwah-Amoah, et al., 2021).

During the pandemic, productivity growth in Sweden decreased due to the many disruptions they faced. However, the pandemic has forced many companies to create efficient solutions in terms of flexible workplaces and new digital tools,

which in the medium-term will increase productivity growth (Sweden´s central bank, 2021).

1.2.3 Productivity in service organizations

According to Onyeaghala and Hyacinth (2016), productivity is a challenging issue related to manufacturing and service organizations. It usually relates to efficiency and effectiveness. Efficiency is described as how many valuable resources are used relative to what it produced while effectiveness is described as the ability of the manufacturing or service process to produce the expected result. Oftentimes, there are differences in the service sector and the manufacturing sector when it comes to being productive. Those differences can even rise from the selection process employed by a certain sector.

Productivity in service organisations was not analysed before the end of the twentieth century and many researchers state that the application of productivity concept in service sector is way more complex than in manufacturing (Rutkauskas and Paulaviciene 2005). The authors also state that one of the big differences between productivity in business within the manufacturing sector and service organisations, is an external element, namely customers. Quality in service sector is very important, since customers often evaluate a service not only by its amount, but many other aspects. In addition, one of the main elements in service organisations regarding productivity is labour, because this sector is highly personnel-intensive in comparison to the manufacturing sector (Rukauskas and Paulaviciene, 2005).

According to Singh (2013), in service organisations, productivity of work is one of the most important indicators that informs us about whether the actions taken by individual employees in the company are sufficiently profitable and effective. At the same time, productivity is an important indicator of economic performance. Productivity is also defined as the goods and services produced per unit of labour, capital or both, and the basic definition is Productivity= Total Output/Total Input (Singh 2013). However, the definition of productivity as it is known and used in the manufacturing sector is not necessarily the same that is used in service organizations (Singh 2013; Linna et al., 2010). For instance, elements such as

energy, machine or materials are not that important as in manufacturing businesses (Rukauskas and Paulaviciene, 2005).

1.2.4 Drivers of employees' productivity

According to Bedarkar and Pandita (2014), engaged employees are an important tool and even a necessity in any business. For that reason, companies and organisations have during the last years identified different drivers, which impact productivity and well-being of employees. Being engaged affects productivity and contributes to a low labour turnover rate. Engaged employees are more productive and in general, companies and organizations show better results, weather they are of economic character or not. In addition, the authors mention three different drivers that have being identified as important factors when it comes to increasing employee productivity. They are work life balance, leadership and communication. However, before going in detailed to those drivers, it is important to understand the correlation between employee engagement and employee productivity (Bedarkar and Pandita, 2014).

Employee engagement is an important element when it comes to organizational effectiveness, competitiveness and innovation. One common definition of employee engagement involves feeling positive about the job and making sure to always to the job in the best way. Another common definition is that employees are intellectually and emotionally committed to the organization (Bedarkar and Pandita 2014). Additionally, there is an association between every driver (leadership, communication and work life balance) and employee engagement, which will lead to increased employee productivity.

Starting with leadership, Bedarkar and Pandita (2014) state that employees get more motivated, satisfied and have a good organizational commitment when they perceive a supportive and trustful leader. A leader imparting confidence, power sharing and good communication could be highly perceived by employees as inspirational and visionary. In fact, when managers and supervisors show relationship-related behaviours, then high levels of employee productivity are observed. When it comes to the association between work life balance and employee engagement, it is stated that when employees have the ability of finding

time for their work and family, there will be success at the workplace. Work life balance involves flextime, working from home and studies have shown that when those are given to employees, there is a tendency to increased employee productivity. Finally, the writers explain how communication plays an important role in employee engagement. In that sense, clear communication from managers is very important for employees and several studies have shown that poor communication is a big barrier to engagement and therefore, employee productivity might be negatively affected (Bedarkar and Pandita 2014).

1.3   Purpose, objectives and thesis question framing

The main purpose of this study was to investigate and explore the impact of a rapid digitalisation (due to COVID-19) on employees´ productivity working in service organisations in Sweden. Existing researches has analysed the association between COVID-19 and digitalization (Amankwah-Amoah et al., 2021), and how this societal challenge has affected companies and its employees in terms of family-work conflict, social isolation and stress (Galanti et. al 2021; Almedia et al., 2020). Both researches agree on that the effects of digitization are also being felt across areas such as marketing, sales and technology.

However, Donthu and Gustaftsson (2020) argue that the success of a company´s digital transformation will mostly depend on how the community, namely, its employees, respond to this digitalisation journey. Furthermore, they state that the pandemic has forced organisations to find new ways to survive, which could also impact the abilities of employees and how they perform their jobs.

At the time of this research, and in terms of employee productivity, existing research focuses on the impact it has on organizational level (Galanti et al., 2021; Almedia et al., 2020; Ravi & Anulakshmi, 2021). But there is a need to further investigate how employees´ productivity have been affected by an accelerated digitalization, mostly caused by the COVID-19 outbreak.

As mentioned before, the aim of this research was to contribute to a better understanding of how digitalization can affect the productivity of employees. Additionally, to give information about how companies and organizations could

take advantage of an increased acceleration in order to keep its employees productive.

In this thesis, the research deals with one service organisation. The research problem of the study is as follows: What are the effects of the rapid digitalization caused by the COVID-19 outbreak on employee's productivity?

Having in mind the purpose of this research and the literature review, the authors have decided to build a research question (RQ) which the thesis aims to answer: How digitalization (due to COVID-19) has affected people working in organizations in terms of productivity in service organisations?

1.4   Methodological implementation

An inductive approach has been chosen in order to analyse the qualitative data from the case study. The purpose with an inductive approach is to develop a theory, explaining a certain phenomenon by searching for patterns from observations (Bernard, 2011). When using an inductive approach, the author aims to identify connections between the findings and the research intentions.

Having that in mind, an inductive approach enabled the authors to make observations about how a rapid digitalization due to COVID-19 has impacted/affected workers productivity, doing generalisations and discovering ideas about the subject. This approach gives the authors the possibility to provide understanding from different observations, identify patterns, and provide a theory (Saunders and Lewis 2012).

In this section, it is also important to describe the selection of research methodology. They are interpretivism and positivism (Saunders et al., 2012). Roughly, positivism is a philosophy with an objective worldview, while interpretivism has a more subjective view. In order to determine which of those philosophies suits this research, it is important to go through the different philosophical assumptions. Those assumptions shape the understanding of the research, the methods and how the findings are interpreted. They are Ontology, Epistemology and Axiology (Bryman, 2008).

The authors of this research are aware that a lot of the data collected will be based on the perspectives and perceptions of the interviewees. Therefore, there is a clear subjective view which means that the research will be interpretivism. In this research, semi-structured interviews were conducted. Saunders et al., (2012) describes semi-structured interviews as a list with unsolved questions where the interviewer gets subjective responses from people regarding a particular situation or phenomenon they have experienced (McIntosh and Morse, 2015). Participants are free to respond to those questions and if any question is perceived as unclear, the researchers can adjust the question to the person. This flexibility of the responses constitutes the semi-structured aspect of this method (McIntosh and Morse, 2015). Semi-structured interviews also allow the researchers to compare participant responses since they are asked the same questions; which means the data collected is comparable.

The chosen case study is a public agency that is catalogued as a service organisation. Its name is Region Stockholm. One of the main reasons why the organisation was chosen is because one of the authors of this research work there. Furthermore, the agency is an established organisation that has been in the market for many years, which is significant to this research since it ensures that the organisation was in the market before the outbreak of COVID-19. This means that this agency had defined working styles and after COVID-19 got forced to change its ways of working and routines.

Region Stockholm is one of Europe´s largest healthcare providers, offering everything from telephone advice about self-care to advanced specialist care at university hospitals. The organization is also responsible for all publicly financed healthcare and public transport in Stockholm County and it has approximately 45 000 employees. This organisation is also responsible for other overall issues within the county, such as regional planning and cultural subsidies. In addition, the organisation is responsible for regional growth and development; creating the best conditions for Stockholm to remain a leading, innovative and attractive city (Region Stockholm 2022). The organization makes important efforts to impact growth by affecting the location of workplaces, the development of the business sector by working with physical regional planning and regional growth.

The hierarchical structure of the organization consists of Region Stockholm Assembly on top, continuing with the Executive Board and then ten different departments such as, Public Healthcare Services Committee, Growth and Regional Planning Committee, Culture Committee, Traffic Committee, among others (Region Stockholm 2022).

Above information were summarized in below table 2.

Table 2. Brief summary of selected organisation

Name	Region Stockholm
Place and date of establishment	Stockholm, Sweden, est. 1971
Employees	45 000 employees
Products, services provided	Healthcare, Public transport, Culture
Sector	Public sector
Clientele	Inhabitants of the Stockholm Region

The participants of the interviews were selected managers from Region Stockholm which has head offices in Stockholm. Those participants have an age range of 35-60 years old, are in charge of staff and have worked in the organisation for at least three years. In that matter, the authors of this research have considered what Flick, von Kardoff and Steinke (2004) state in their article about sampling techniques. They mean that in organizations not all of those interviewed should come from the same level in the hierarchy or belong to a single department, if the culture of an organization is being investigated. Different managers of different departments and levels in the organizations were interviewed.

According to Flick et. al., (2004), a strategy to analyse the material can be divided into different stages. Braun and Clarke (2012) explain the thematic analysis strategy which was used in this research. The authors of this research began with

an intensive and repeated reading of the transcribed interviews. Here, it was important to note, for every interview transcribed, the topics that come up and how different aspects can be related to the context of the research question. This first step can be related to Braun and Clarke (2012) who call this step as familiarization with the data. The purpose is not to find the same topics in all interview texts, but it might be useful to start identifying similarities and differences between the interviews.

Braun and Clarke (2012) state that the second step is coding which involves generating labels for important features of the data. Based on this, it is important to identify topics and themes. The authors of the research allocated all the coded data relevant to each identified theme. The next step consisted of overlooking the themes of the collected data. Here, it is important to make sure that the themes tell an accurate story about the data. Only relevant themes where the data fits were relevant (Braun and Clarke, 2012). After this step, the authors of the research defined and name the themes, giving the themes constructive and informative names. Finally, the thematic analysis consists of writing the analytic narrative to tell the reader a coherent story about the data, answering the research questions in a structured way for the reader.

1.5   Ethical foundations and reliability

To ensure that the data collected from the interviews are of high quality, diverse ethical aspects are taken into consideration. Some of those are anonymity and confidentiality, reliability, validity, credibility and transferability. Anonymity and confidentiality are important aspects since the privacy of the participants needs to be protected. Before every interview, the authors of this research explained to the participants that collected data would be written anonymously. The importance of ensuring the credibility and reliability of a research is one of the most important ethical factors in order to create and reflect trustworthiness of the research (Shenton 2004). When writing this research, the authors clearly explained the approach from selection, data collection, and analysis in a detailed manner so the reliability and credibility of the essay would increase. According to

Guba and Lincoln (1994), reliability means ensuring a complete account of all phases of the research process.

Furthermore, the thesis is a limited study, which means that the transferability of the results to other contexts or as a representative interpretation cannot be entirely done. It is also important to mention that the researchers did not let their personal opinions or values influence the result of the research.

1.6 Schedule and required resources

After reflecting what to include within the scope of this research, the most important factors to consider were overall time, budget and geographical aspects. This research was conducted in one organization located in Stockholm. There was no need for transportations costs or any other costs since one of the authors of this research works in the organization where the interviews were conducted. Furthermore, some interviews were conducted online.

The interviews took place during February and March 2023 and they were transcribed afterwards. The time to take notes of the data, coding it and finding patterns was around one week. The empirical finding and the analysis of the data were the most intense areas of this research and the authors had constant contact with their supervisor in order to get feedback that would lead to improvements. After this step, the authors of the research were able to send their paperwork for language and academic review at the end of April 2023, and the entire thesis is expected to be finished around in May 2023.

1.7 General structure of the thesis

Thesis consists of six chapters. First chapter – introduction –Second and third chapter go through literature. Next one describes research design. Chapter number five presents findings of the authors. Closing chapter includes discussion and conclusion.

2   DIGITALIZATION IN SERVICE ORGANIZATIONS

Digitalization is a fundamental forced triggered by Industry 4.0 and IoT that is changing the way organizations make business and activities. Thanks to digitalization, the relationships between companies or governmental agencies and customers are different and new business models are being created (Parida 2018).

According to Parida (2018), to achieve new business opportunities and keep up with a fast-changing business environment, organizations need flexibility and speed which can be achieved thanks to new and better technologies. Thanks to new technologies in processes and services, digitalization can impact business and society. The author also defines digitalization as the use of digital technologies to change a business model and provide new revenue and value-opportunities. Digitalization is about moving into a digital business and a technological transformation that is based on sensors and many other devices from the Internet of Things (IoT), forming a great foundation for digitalization. Furthermore, there are three elements of digitalization; they are sensors, devices that make the smart systems and connectivity. Additionally, digitalization causes large-scale transformations across many areas of service organizations. And since many people have access to internet, smart phones and other services and goods, the technology consumption increases, thus providing opportunities for value creation for industries and service organizations (Parida 2018).

PWC´s (PricewaterhouseCoopers) 2016 Global Industry 4.0 Survey (2016) shows that digitalization in different industries will increase around 2.9% in annual revenues and reduce costs by 3.6%. In addition, many systems and services will be customized in order to meet customer´s needs. According to PWC´s research, it is also important to give affordable broadband to billions of customers, which also displays the importance of the mobile devices' usage (PWC 2016, Parida 2018).

According to Parviainen et al (2017), one of the biggest trends that is changing business and society is digitalization. This phenomenon can be identified as the adoption of new and digital technologies in an organisation´s operational

environment. Digitalization refers to the application of digital technologies in many aspects within organizations. That is why the term digitalization can also be defined as digital transformation. The authors also define digitalization as changes in roles and ways of working thanks to the adoption of new technologies at different levels of a service organization. Those changes could be at a process level, which means the adoption of new digital tools and streamlining processes by reducing manual steps. At an organisational level, the changes would implicate offering new services and taking away obsolete practices while offering already existing services in new ways. In a business domain level, it would be changing roles and value chains in an organisation´s ecosystem (Parviainen et al 2017).

In order to achieve digitalization in organizations and take benefit from it, Parviainen et al (2017) point out a model which purpose is to support service organizations in their digital transformation. The first step of this model is to analyse the impact of digitalization for the organization by identifying trends of digitalization and the relevance those trends could have to the business. The next step of the process is to analyse the organization´s digitalization drivers and define which goals the organization has with its digitalization process. Usually, those goals can differ. For instance, the goal could be the use of technology for faster operations or a complete renewal of business.

The next step of the model described by Parviainen et al (2017) is to analyse the service organization´s current situation from the point of view of the defined goals. If the goal is related to internal efficiency, the related tools, resources and processes are identified. On the contrary, if the goal is related to external factors, competitors, customers and other external resources will be identified. The third step is about defining the approach that should be taken in order to close the gap from the organization´s current state and the desired position. Here, it is important to define concrete actions to reach out the new position. Those actions could be taking on new technologies, optimizing existing processes and utilizing other type of digital opportunities. Also, when those actions are identified, they should be prioritized in order to define costs. Some of the most common costs of digitalization can include support and training for staff,

and the technology needed for digitalization. In this process, it is also important to take into account the organization´s ability to change, so the correct pace of change is implemented (Parviainen et al 2017).

Finally, Parviainen et al (2017) describes the last step of the model. This step consists of implementing and validating the defined actions in the previous step. In this step, it is also important to consider socio-cultural challenges within the organization on the involved people since it is usual to face resistance by employees, but also technical challenges which can arise due to the difficulty of adopting new technologies.

2.1 Drivers of digitalization in service organizations

According to Parviainen et al (2017), a service organisation has huge benefits thanks to digitalization processes. By digitizing information-intensive processes, costs can be reduced up to 90%. Additionally, replacing paper or manual processes with software can make processes quicker and better understood. Another potential benefit of digitalization is the use of real-time reports which can allow decision-makers to address problems before they are critical. Furthermore, there are studies suggesting that digitalization improves employees´ quality of life and allows the organisation to operate with much more efficiency and transparency (Parviainen et al 2017).

Organisations are well-aware of the existing risks when neglecting digitalization, and they know the benefits of it, such as bringing new business opportunities, a better operation environment and better quality of life for managers and employees (Parviainen et al 2017). Having this in mind, the impact and the goals of digitalization in a service organisation can be seen from different points of view, internal efficiency, external opportunities and disruptive change. The internal efficiency of an organisation increases due to better business processes, quality and the elimination of manual steps, aspects that can be achieved thanks to digitalization. In addition, digitalization also leads to work satisfaction since the employees can get automation of their routines and therefore, they will have more time to develop new skills. When it comes to external opportunities, digitalization improves client service, and it creates the possibility of doing more business

through new channels. Thanks to new technologies, more opportunities can be created for the customers. Finally, the digitalization journey will bring disruptive changes to the organization´s operating environment. For instance, new implemented technologies in the organisation can lead to the change of current technology and can create a completely new business (Parviainen et al 2017).

As claimed by Lindgren, Madsen, Hofmann and Melin (2019), numerous service organizations are adopting digital technologies to have better interactions with customers. Activities such as service automation or machine learning are important to improve efficiency and service by reducing service times and increasing transparency, not only towards the customers, but also within the organization.

To better understand the positive correlation between service organizations and digitalization, Lindgren et al (2019), start explaining the concept "public encounter". Public encounter refers to the traditional interaction of customers and workers and how they communicate to conduct business. Those interactions often concern information exchange or the provision of a service. Thanks to digitalization, those interactions or encounters can occur through several channels and take place in different settings, which in fact changes the nature of the encounter itself. With the implementation of digitalization, entire service processes can now be supplied through digital channels, online applications, video meetings, among others (Lindgren et al 2019).

For instance, in Sweden and other Nordic countries, healthcare is provided by public service organizations and the increased use of digitalization has made possible new interactions between doctors and patients. In many cases, the physical meeting is no longer required, and patients can get a service that was unthinkable before. Certainly, this is only a short example of how automated processes and systems are increasingly taking place in service organizations, sometimes even without the involvement of human resources. But when human resources are involved, which happen in most cases, the levels of quality and satisfaction within employees is also notable (Lindgren et al 2019).

Historically, digitalization has impacted the way business are made in service organizations, creating changes in the world of work, but also challenges and opportunities within the affected organizations (Cijan, Jenič, Lamovšek & Stemberger, 2019). In their research, they also make reference to other studies suggesting that there is a clear positive connection between digitalization and employees´ job satisfaction. One of those studies shows that after the implementation of new technologies in service organizations, employees felt more devoted, motivated and felt that their work was acknowledged. Additionally, the use of new technologies has resulted in making employees work smarter which has brought numerous benefits to the organization´s human resources (Cijan et al 2019).

Another positive aspect about digitalization is service organizations is the increased level of worker autonomy Cijan et al (2019). They suggest that thanks to new technologies, many employees have more freedom as they can carry out different activities without the approval of a manager. Employees can also communicate faster which also makes the organizations a little more decentralised. Moreover, the implementation and use of new technologies also lead to more autonomy when it comes to working time or accomplishing different tasks (Cijan et al 2019).

Equally important, Parviainen et al (2017) mention other main driver of digitalization, which is improving efficiency of operations. Service organizations want utilize digitalization in order to improve their service processes so they can collaborate better with customers and organizational units. They also concluded that other digitalization´s drivers are technological developments within the organizations, such as changes in the operational environment which also could lead to better balance management. Additionally, the need of adapting to customers' needs is also seen as a main driver of digitalization. Many service organizations need to ensure that customer needs are taken into account, thus creating a closer interaction with them.

In this discussion, Jones, Hutcheson & Camba (2021) also bring the benefits and impacts of digitalization as follows: operational efficiency, value creation, new business models and competitive advantage. They continue explaining why they

believe organizations choose to undergo such a complicated process of change. In this matter, they find that three drivers were customer demands, process improvement for the organization and workplace improvement. Similarly, Branca, Fornai, Colla, Murri, Streppa, & Schröder (2020) suggest that service organizations decide to implement digitalization and enable new technologies in order to improve the reliability and flexibility of processes and to enhance the product or service quality. Additionally, another driver of digitalization is monitoring and assessing the performance of processes, improving control of production and impacting resource efficiency. In order to do that, organizations need to start their digitalization journey by enabling technologies such as IoT, Big data Analytics, Cloud Computing, Cyber Security among others (Branca et al 2020).

Branca et al (2020) state that many sectors are starting to understand the logic of digitalization and why it is so important. This understanding is indeed a driver that make organizations want to implement digital technologies in its processes. According to them, there are key sectors that are imminent for effectively implement the digitalization process and they are Digital Data, Automation, Connectivity and Digital Customer Access. First of all, Digital Data allows better quality forecasting of process behaviour and also smarter and faster decision making at the organization. Thanks to Internet of Things, devices with software and wireless capabilities get connected with data collection and storage, which results in new data sources. Second of all, the automation step concerns the combination of Artificial Intelligence and traditional technologies which result in systems working autonomously. This will reduce error rates and increase speed. Finally, connectivity refers to the connection of separate systems which can result in process efficiency improvements. Finally, the digital customer access refers to the direct access to customers through mobile internet which provides transparency and new services (Branca et al 2020).

2.2   Barriers to digitalization in service organizations

Despite the well-known importance of digitalization, there still are many service organisations having big problems understanding the great impact of

digitalization (Parviainen et al 2017). Many organisations identify obstacles to the digital transformation journey, mainly because it implicates big changes in habits and ways of working. According to the authors, the digital transformation hasn´t succeeded in several service organisations because they were not able to change their processes and mindsets. Also, one of the biggest obstacles for digitalization in service organisations has been lack of technical skills (Parviainen et al 2017). Furthermore, there are also other factors related to technology infrastructure, security, privacy concerns and institutional and organisational constraints that have been identified as barriers to digitalization (Amankwah-Amoah et al. 2020).

In addition, Galanti et al (2021) argue that the increased digitalization in the workplace, which in turn leads to remote working, affects the social context that employees have in their usual workplace. According to them, this can create the perception of isolation. However, further studies about the implication for that possible isolation are still to be made. Cijan et al (2019) also suggest in their study that digitalization in service organizations can bring work-life balance related problems. Even though technology can make work more efficient, it also means that the permanent access to technology leads to difficulties in disconnecting from work. In that sense, it is sometimes not possible to get away from work. This means that the development of new technologies has also induced a lot of worries among employees. Moreover, employees think it is hard to switch off from work when working from home, and to track time spent of using technology for work purposes is increasingly more difficult (Cijan et al 2019).

Likewise, Cijan et al (2019) also state that employee work-life balance could be negatively affected. They mean that the use of work-related smartphones and being connected to work even during free time could lead to less opportunity to recover from work. Hence, it could be said that technological devices increase the flexibility of an employee, but it could also blurry their work/life balance. In this matter, it is also important to mention that digitalization could also lead to higher unemployment and widespread workforce de-skilling (Branca et al 2020). That is because low-skilled activities could be permanently affected, and many skills and jobs can be polarized, and even though it has been assumed that digitalization

will upgrade low-skilled activities, they can disappear which could affect people considerably (Branca et al 2020).

Another negative aspect is the fact that the more digitalized processes there are, the easier the monitoring of professional activities is (Cijan et al 2019). For instance, the increased use of digital devices can make permanent accessibility possible for supervisors and that can potentially lead to lower levels of individual autonomy and more control over them. In fact, there are already several studies suggesting that using informational technology increases control over employees when it comes to proficiency evaluation or time tracking (Cijan et al 2019).

In addition, Jones et al (2021) state that many studies have identified the barriers to digitalization, and they are often categorized in a rank of difficulty in overcoming. The authors mean that most of the barriers reported are related to technology, data insufficiency, complexity in integrating systems, cybersecurity threats and unsuitable infrastructure at the organization. Furthermore, there are also organizational leaders that are concerned with the technology, how it should be implemented and how it would impact the organizations' employees.

2.3 Digitalization and COVID-19

It is not a surprise that one gigantic consequence of COVID-19 is the accelerated use of digitalization of organizations. Many service organizations have seen the need for change by shifting their commercial activities from offline to online outlets. Moreover, many companies experienced big changes and they had to implement solutions based on digital technologies (Amankwah-Amoah et al. 2020; Almedia et al. 2020).

According to Almeida et al. (2020), digitalization is not a new phenomenon, but the focus organizations usually have had before COVID-19 was mainly Internet of Things or Web 4.0, where the disruption of some concepts and technologies were expected to happen, and at some point, the speed of the digital transformation was also expected to be faster. However, due to COVID-19, the challenges were imminent, and it was completely necessary to involve all the stakeholders and the organization to face the new reality (Almedia et al., 2020).

Under normal circumstances, digitalization requires new processes, a more agile and organic structure and even the reinforcement of standardization and automation. Those are usually complex processes, but the COVID-19 outbreak almost forced many service organizations to accelerate those processes of digital transformation (Almeida et al. 2020). One of the biggest challenges that many service organizations went through was in the labour and social relations area. In this matter, employees had to adapt to a new reality where remote work was predominant. Homes became workplaces and many people had to deal with office work and domestic tasks at the same time. That change also woke up psychological barriers to the adoption of new technologies (Amankwah-Amoah et al. 2020).

Remote work was undoubtedly one of the main changes in many organizations and according to Amarankwah-Amoah et al. (2020), many employees started performing their jobs of the employing organization from home and remote working became more acceptable to service organizations that previously had been reluctant to do it. According to Andersen & Kelliher (2020), many organizations were concerned with a possible loss of control and didn´t trust their employees to exercise their work autonomy. Nevertheless, the pandemic forced a lot of firms to embrace the use of new technologies to shift to remote work even though they might have had doubts in doing so before (Amarankwah-Amoah et al. 2020).

Hjalmsdóttir and Bjarnadóttir (2021) also explain in their article the multiple effects of digitalization due to the COVID-19 outbreak. They state that digitalization and COVID-19 somehow disrupted the work-life balance, where the long-term health effects are yet to be investigated. Additionally, there is a gender dimension, in which especially women often must balance the demands of their work and managing their homes; situation that can put them under great stress than men.

In their article, Amarankwah-Amoah et al. (2020) also mention how service organizations are increasingly adopting new digital technologies in order to enhance efficiency and effectiveness. With the COVID-19 outbreak, this became an imminent need and tools for digitalization such as tablets, laptops, high-speed wireless broadband and high-capacity storage devices needed to be available to

organizations. Also, other kind of technologies that were growing up before became even more relevant since different tasks couldn´t be done physically due to the restrictions. Technological solutions such as electronic scanning or storing information and images on the cloud became more acceptable (Amarankwah-Amoah et al. 2020).

3   EMPLOYEE PRODUCTIVITY IN SERVICE ORGANIZATIONS

According to Bhatti and Qureshi (2007), productivity measures both efficiency and effectiveness. Efficiency and effectiveness can be achieved in high performing and effective service organizations that usually have a culture that encourages employee involvement. The authors mean that when employees are willing to get involved in problem-solving activities and decision-making, it usually results in better employee performance in the organization. Also, when employees are satisfied in their jobs, productivity increases because there is more motivation to achieve a better performance.

Improving employee productivity is one of the biggest objectives of service organizations because high levels of employee productivity are beneficial to both organizations and their employees (Farooq and Sultana 2022; Hanaysha 2016). Having this in mind, various terms have been used to describe employees' productivity. The main terms are organizational performance and employee performance. Employee performance shows the outcome of the employee that affects the performance of a service organization, and it could be a financial or non-financial outcome (Farooq and Sultana 2022). Then, the performance or productivity could be described between subjective and objective measures. When measuring employee productivity, the subjective measures are preferred because managers can use the relative measures of performance, even though there could be problems with social desirability or supervisor biases.

In line with subjective measures, Bedarkar and Pandita (2014) mean that in order to understand how employee productivity is measured, it is also important to understand the concept employee engagement. In their paper, Bedarkar and Pandita (2014) explain different definitions of employee engagement. According to different studies, employee engagement is related to the need of employees to engage with their work and organizations. Engagement is also a sensation employees experience when they are totally involved in their work. Employees' engagement is also defined as an attitude of employees towards the values of the organization they work in, wherein employees have a wide

awareness of the business context and work so they can improve job and organizational effectiveness (Bedarkar and Pandita, 2014).

According to Hanaysha (2016), productivity is easier to comprehend and measure in manufacturing contexts, but since many businesses have shifted to service context, the issue of evaluating productivity becomes more difficult to understand. That is why effectiveness and efficiency are key components of productivity. In their article, Hanaysha (2016) states that one of the key strategies that service organizations can use in order to improve employee productivity is the assurance of good working environment and the well-being of employees. This will be further explained under drivers of employee productivity.

3.1   Drivers of employee productivity

According to Hanaysha (2016), organizations have an increased concern towards improving employee productivity because high levels of productivity help organizations enhance their profits. As mentioned before, engaged employees are an important tool and even a necessity in any business (Bedarkar and Pandita 2014). That is why organizations have during the last years identified different drivers, which impact productivity and the well-being of employees, thus generating employee engagement.

By referencing many studies, Bedarkar and Pandita (2014) explain the association between four drivers and employee engagement, which leads to increased employee productivity and better organizational performance. Starting with leadership, the authors mean that good leadership behaviours lead to motivation, job satisfaction, proactive behaviours and organizational commitment. When employees trust their leaders and leaders are supportive, a blame-free environment is created, and it contributes to employee engagement. When leaders have good management and act as mentors towards their employees, giving confidence and good communication, they can be perceived as inspirational and visionary; and that increases employee productivity (Bedarkar and Pandita, 2014).

The second driver described by Bedarkar and Pandita (2014) is Work life balance and employee engagement. In that sense, when employees can find a balance between their work and family, there will be success at the workplace. In this context, work life balance refers to flexible work options, organizational support for dependent care and family leave. Hence, studies have shown that when those perks are given to employees, there is a tendency to higher employee productivity. The third driver is employee engagement and employee and organizational performance. Bedarkar and Pandita (2014) state that many studies have shown that employee engagement leads to better employee productivity, which leads to better organizational performance. That usually happens because engagement results in positive health and positive feelings towards the organization. Engagement can also lead to creativity, motivation, ethical behavior, which in fact leads to a more productive and happier employee.

Finally, Bedarkar and Pandita (2014) explain how communication plays an important role in employee engagement. In that sense, they argue that clear communication from managers is very important for employees. According to them, several studies have shown that poor communication is a big barrier to engagement and therefore, employee productivity might be negatively affected.

In addition to the drivers of employee productivity suggested above, Hanaysha (2016) mentions two other key drivers of employee productivity. They are work environment and organizational learning. Work environment refers to the environment where employees work in order to achieve organizational objectives. In addition, a good working environment exists when all needs and facilities that help employees to their jobs are provided. In a broader perspective, work environment refers also to the integration of psychosocial dimensions including motivation, employer relationship, career demands, among others. Having this in mind, organizations have realized how important the environment of a workplace is in order to increase employee satisfaction, maintain quality personnel, increase productivity and enhance competitive advantage. That is why the quality of a workplace environment has a big influence on the level of employees´ motivation. Furthermore, when organizations create a work environment designed to fulfil employees´ satisfaction, that will lead to motivating employees towards achieving

higher productivity. In consequence, important factors such as reasonable workload, supervisor support, training and development programs, among others are important to create a working environment that positively affect employees´ productivity (Hanaysha 2016).

The next key driver of employee productivity described by Hanaysha (2016) is organizational learning. In this sense, learning activities for employees are very important for their own development and the organization development. Organizational learning consists of three stages process including knowledge acquisition, dissemination and application of knowledge between organizations members. In that sense, when employees get to learn new skills, the level of organizational intelligence improves and that leads to higher levels of employee productivity. In conclusion, Hanaysha (2016) suggests that service organizations can actually improve the productivity of their employees by enhancing the conditions of working environment where employees can enjoy their work and have the potential to reach their goals. Additionally, organizational learning has a very important effect on employee productivity. This can be achieved by giving continuous learning programs to employees that can be fundamental for greater productivity.

3.2   COVID-19 and its impact on employee productivity

According to Farooq and Sultana (2022), due to the COVID-19 outbreak, many organizations shifted their operations to work remotely and a big number of companies across the world are set to have fewer employees working from the offices in the future. Undoubtedly, one of the biggest changes companies and service organizations have witnessed is the implementation of working from home (WFH). Even though WFH is not new, there has been a trend since 2020 suggesting that kind of work is becoming the new normal. As mentioned before, employee productivity is an important objective of service organizations because high levels of employee productivity are beneficial to both the organization and its employees. However, to measure employee productivity, even in the WFH model has become more complex (Farooq and Sultana, 2022; Hanaysha, 2016).

According to Menon (2020), in many cases, longer working hours leads to increased employee productivity, but that put the burden onto the employees. And if employees are working from home, it becomes more difficult to know who is working and who is not, so that would not be a good measure anymore (Farooq and Sultana, 2022). In fact, remote work brings new challenges for employees to stay productive and connected. Nevertheless, organizations have the ability to improve employee productivity by motivating their employees, so they develop a functioning knowledge-sharing plan, use the appropriate communication channels and also maintain social interaction. In that way, organizations could measure productivity and not hours (Farooq and Sultana, 2022).

According to several studies that Farooq and Sultana (2022) reference in their article, many organizations still do not know how big the impact of WFH (due to the COVID-19 outbreak) on employee productivity is. However, a few investigations showed that many leaders were worried that WFH would lead to lack of proper connectivity, data allocation and remote collaboration, which could cause a deterioration in employee productivity. Interestingly, Farooq and Sultana (2022) mention other studies made before COVID-19 outbreak showing that work-at-home employees were happier and more productive compared to employees who came into the office.

Another important aspect regarding employee productivity and how it gets impact by WFH after the COVID-19 outbreak is the gender differences. Limited studies have examined this issue, but some studies have showed that the home-work experience is different for women than men since women are more likely to work at home so they can accommodate family and work demands. However, men are more likely to work at home in order to facilitate additional employment time (Farooq and Sultana, 2022).

4 RESEARCH DESIGN

In this chapter, the authors have described research approach, case selection process, used methods. Additionally, research process has been presented followed by data collection, analysis, reliability and validity of this research.

4.1 Research approach

A case study method was chosen to perform the research. According to Stake (2005), the case study is a universal research method used both in the sciences referred to as nomothetic (economics, sociology) and idiographic (psychology, medicine). The case study method is classified as a qualitative method, but it is indicated that it should be supplemented with numerous quantitative methods. Generalizations based on the case study method should combine qualitative research with quantitative indicators relating to the population, be based on intentional (or theoretically based) sampling, influenced by time or resources, and reference to a given model analytical. Case study is a research method containing a broad description of a given phenomenon, aimed at its in-depth analysis and evaluation. By using many techniques of collecting and analysing data, it allows the researcher to solve scientific and practical problems (Stake, 2005.)

A case study can be used to indicate the reasons why a given project and/or a given person was successful, or on the contrary to show the difficulties that exist before a given type of process and / or institutions appear when taking specific challenges related to their activities. In other words, case study allows the researchers to learn from other people's mistakes, but also from other people's successes. Case study can also be a good way to demonstrate the characteristics of a process or institution. (Yin, 2009).

The case study research methodology was chosen because the authors had analysed one company (Region Stockholm) in which one of the authors is employed, and there were no available peers on that specific company.

Additionally, an inductive approach was chosen in order to analyse the qualitative data from the case study. In research, inductive reasoning refers to a logical process - "from detail to general" - in which specific cases or situations are observed or analysed in order to establish general principles, rules, patterns. In this process, strong evidence for the truth of the conclusion is sought. This process is used to develop understanding, based on observing patterns, to determine how something works. In inductive reasoning, there are some possibilities that the conclusion drawn may be false, even if all assumptions are true. Reasoning is based on experience and observations that confirm the apparent truth of the conclusion (Yin, 2009).

4.2   Case selection and description

The chosen case is a public agency catalogued as a service organisation. Its name is Region Stockholm. This is a well-stablished public organisation that has been active for many years, which is significant to this research since it ensures that the organisation was active and operative before the outbreak of Covid-19. As mentioned before, the organization is one of Europe´s largest healthcare providers and it offers everything from telephone advice about self-care to advanced specialist care at hospitals. The organisation is responsible for all publicly financed healthcare and transport in the city of Stockholm. With around 45 000 employees, the organisation is also responsible for other issues in the county, regional planning and cultural activities. The mission is to achieve regional growth and development, making Stockholm a leading, innovative and attractive city (Region Stockholm 2022).

4.3   Research methods

Semi-structured interviews (Appendix 1) had been conducted in the case company. Questionnaire was prepared in two language versions – Swedish and English. A semi-structured interview is an interview that contains instructions on what issues should be discussed. The researcher joins the interviewee's statement to clarify the statement or clarify the question asked (McIntosh and Morse, 2015)

Table 3: Participants interviewed

Interviewee	Role	Location	Duration	Language
1. A	Head of Regional Executive Office	Face-to-face	43 min	English
2. B	Purchasing Director	Face-to-face	35 min	English
3. C	Committee Secretary	Via Teams	33 min	Swedish
4. D	Head of Unit at Strategic HR	Face-to-face	38 min	Swedish
5. E	Head of Unit Infrastructure	Via Teams	40 min	English

Semi-structured interviews were designed to ascertain subjective responses from the managers, regarding a particular subject or situation they had experienced. That type of interview allowed the researchers to prepare open questions in advance. Participants were free to respond to those questions. If any question was perceived as unclear, the researchers could adjust the question to the interviewee. This flexibility of the responses constituted the semi-structured aspect of this method. Semi-structure interviews also allow the researchers to compare participant responses (McIntosh and Morse, 2015).

All participants were asked the same questions which means the data collected was comparable. Since the participants' spoken language was diverse, they were given the choice to answer the questions in English or Swedish. Interviews were conducted face to face in Region Stockholm or with usage of an online platform (Teams). The participants were asked for their permission to record the interviews. Every interview lasted 30 minutes on average.

4.4 Research process

For a case study to be conducted properly, the process of creating a case study must proceed in stages, each of which must be related to or derived from the previous one. The case study process can be divided into three general stages: design, data collection and analysis, and debriefing. The design stage includes preparation for conducting a given study, development of a protocol containing the purpose and scope of the study, a survey with questions, selection of the research subject and gathering preliminary information about it. Data collection and analysis involves collecting information about the test item from possible sources and creating a database of them. Analysis and summary (result) consists in analyzing the collected data, systematizing them, drawing conclusions and using them for a specific purpose included in the research project (Stake, 2005).

The research process began in February 2022. Interviews took place between February and March 2022. The analysis began shortly after and lasted three weeks. The report and summary were prepared in April 2022.

4.5 Data analysis

The data analysis process started by scripting the recorded semi-structured interviews into a text. This was made by using a thematic analysis approach, which is a flexible and popular method of qualitative data analysis (Braun and Clarke, 2012). The use of this method allowed the authors to identify similarities and differences in all researched aspects in the interview's texts. The authors started the process by becoming familiar with the data. This step is called as familiarization with the data. The next two steps consist of generating codes and themes based on the data. In this step, the authors coded each segment of data that were identified as relevant or that captured something meaningful about the research question. In this process, 13 codes were identified. The final step was about defining and naming the themes. It is important that the themes have an informative name, so the analytic narrative tells the reader a coherent story about the data, and where the research question is answered in a clear and structured way (Braun and Clarke, 2012). As a result, four themes were created.

4.6 Reliability and validity

According to Guba and Lincoln (1994), all research must contain truth value, consistency, applicability and neutrality so it can be considered worthwhile. There are also specific criteria for addressing trustworthiness. The criteria in qualitative research are credibility, transferability, dependability and confirmability.

According to Golafshani (2003), the validity or trustworthiness represents a credible and defensible result. That may lead to generalizability, which is one of the concepts suggested by Stenbacka (2001) as the structure for doing and documenting high qualitative research. In this regard, the quality of a research is connected to the generalizability of the result and therefore leads to increased validity of the research. The authors explained the approach to case study selection, data collection and analysis so the reliability and credibility of the report increased. However, this thesis is a limited study, which also means that transferability of the results to other contexts cannot be fully done. A representative interpretation cannot be done either. In this study, the authors did not let their personal opinions or values influence the analysis and result of the research.

5 FINDINGS

In this chapter, the empirical findings from the semi-structured interviews are presented. In the beginning, the authors provided a brief description of the services that the respondents offer in the organization. Secondly, the main findings of the study are presented along with the identified research themes.

As a government agency, it was clear that the respondent´s units offer on demand service to other stakeholders, thus making Region Stockholm a service organization. Some of the respondents were clearly expressing that one of the main tasks of their units was to support the political level and the elected officials in different matters, depending on the area of expertise.

The Head of Regional Executive Office stated that: "*We support our elected officials with their duties. We give them proposals on how to make decisions*. In a similar way, the Purchasing Director expressed: "*We support the political level and work with development regarding digitalization and implementing category management at Region Stockholm*".

On the other hand, some respondents stated that they work with different kinds of community-oriented projects. For example, the Head of unit at Strategic HR stated that: "*My unit works in various subject areas with working environment issues, equality, multidisciplinary, leadership initiatives, skills planning*". Similarly, the Head of the Infrastructure unit expressed: "*We work for the region, for the city of Stockholm, consisting of businesses in the city for regional development, giving them sustainability through projects. We work with plans that are aimed to give a better future for the citizens of the city*".

The authors of this thesis identified different themes: managers´ perceptions of productivity, drivers of employee productivity, drivers and barriers to digitalization and view of digitalization in the future.

5.1 Managers´ perceptions of productivity

When the authors had started identifying patterns in the interviews, initially three codes were created: effectiveness, result-oriented and sound environment.

Those codes constituted what managers thought about productivity and how they perceived it. Thus, the codes give life to the theme Managers´ perceptions of productivity.

The efficiency code was identified because some of the interviewees said that the ability to achieve organizational goals is a very important stone for being productive with as little wasted money or time as possible. For instance, The Committee Secretary stated that: "*High level of output without the need of extra input. Basically, productivity is about being effective with the performance of the assigned tasks without taking extra steps*".

Additionally, the Head of Strategic HR unit stated that: "*For me, productivity is about delivering what we need on time with good quality and being effective with the use of our resources*".

All participants said they were aware of their perceptions of productivity. However, at the same time, they believed that the reason for this was that productivity could not be measured, as in the manufacturing sector, where equations and numbers were used.

Continuing with the explanation of managers´ perception of productivity, some of the participants argued that result-oriented employees were very important for the organisation, and it usually led to higher productivity. The Head of Regional Executive Office expressed: "*I won´t keep records of how much you expend at your work. For me, it does not matter if you work 7 or 9 hours. The important thing is what you produce and your results*".

According to the importance of a results-oriented atmosphere at work, to be productive, the Head of unit at Strategic HR stated: "*Productivity for me, is about delivering and meeting goals and assignments that we receive from above*".

Sound environment was also identified as a code because some of the interviewees argued that productivity could only be achieved if organizations took care of their personnel. For example, Head of unit at Strategic HR said that: "*As a manager and especially during and after Covid-19, it became even more*

important to make sure that my employees feel good and are satisfied with their jobs, so they can be productive in what they do".

Similarly, Head of Regional Executive Office stated: "*I must make sure that my employees have a good working environment both at the office and at home, giving them the support they need. Also, it is very positive that Region Stockholm has a distance-working policy that gives all of us the necessary equipment such as screens and appropriate chairs and desks at home, so we all can work properly".*

5.2   Drivers of Employee productivity

Analysing the data where the interviewees express how they make sure their employees are as much productive as possible in their work, the researchers founded some patterns among the answers. Thanks to that, four codes were identified: trust, balance in private and working life, clarifying goals and leadership. These codes are seen as characteristics that drive and increase employees' productivity.

Trust was identified as a code because some respondents made it very clear that trust in employees is the basis for their development and engagement, which in turn leads to higher employees' productivity. For example, Purchasing Director stated that: "*Trust is important because it gives people growth".*

Similarly, it was perceived that managers should give employees trust and some freedom, thanks to which employees would engage on a larger scale. This was explained by the Head of the infrastructure department by saying*: "I know most people want to do a good job and feel responsible. When you give them trust and freedom, I think they respond positively and perform a good job making them more productive".*

Additionally, and in line with the positive perception about trust and freedom, the Head of Regional Executive Office pointed out: "*I trust my employees until they prove otherwise".*

When discussing what drives employee productivity, not only trust was identified as an important pattern. Balance in private and working life was also detected as a code. Some of the respondents stated that when employees could have a better balance between their family time and work, they were more likely to be productive. For instance, the Head of unit at Strategic HR said: "*I think that when they have bigger possibilities of mixing working life and private life, there are positive results. Many feel less stressed when they can work from home*".

Additionally, The Head of unit Infrastructure explained how good and convenient it was for people to work at home and how that affected their productivity: "*I think it´s good for people to work at home part of the week. Easier to find balance between work and private life*".

Furthermore, clarifying goals was recognized as a recurrent topic among the interviewees´ answers regarding what drives employee productivity. Some of the respondents had the perception that having clearer and more specific goals motivated employees to become more productive. First, the Head of unit at Strategic HR stated that: "*I make it clear why they do things, clarify the goals, and help when they encounter obstacles*".

In addition, the Committee Secretary supported this idea by stating that: "*I provide the right conditions for my employees, so they deliver on time and against the set goals*".

Another common pattern identified that contributed to creating the theme "Drivers of employee productivity" was that employees were more motivated and engaged to perform their jobs when they had a good leader. Thus, having supportive managers was a big reason why employees' productivity became better. In accordance with this, the code identified was leadership.

To support the previous idea, the Purchasing Director affirmed that: "*By being a coaching leader and supporting my employees, I make it easier for them to do their jobs and that improves their productivity*".

Having good leadership, in which it provided the right conditions, motivated employees to further development, and thus to increased productivity. In this line,

the Committee Secretary affirmed that: "*I make sure that my employees get the right conditions to work and support from me so they can perform their jobs effectively*".

5.3   Drivers and barriers of digitalization

In this section, patterns with the respondent´s perceptions about an accelerated digitalization due to the outbreak and after Covid-19 were found. Both positive and negative perceptions about an accelerated digitalization were detected and clarified how they influenced employees' productivity.

When it comes to the positive perceptions on an accelerated digitalization, the patterns or codes are: important and necessary, increase of transparency and better ways to communicate.

Regarding the negative perceptions of an accelerated digitalization, the patterns or codes are: less social interaction and dependency on technology and blurred line between work and private life.

The code important and necessary was identified since most of the interviewees believed there were many benefits and opportunities for the organisation when they had to digitalize many of their operations and ways of working. For example, the Head of unit at Strategic HR stated: "*I think it was a necessary push*".

According to one of the managers, there were discussions in the organization about the implementation of a new digital platform for communication, presentation and information sharing. However, discussions continued for a long time and no decisions were made. When the pandemic hit, the organization had no choice but to implement the plan to implement the platform, which brought them an incredibly higher level of employees' productivity. The Purchasing Director said: "*Suddenly, we had to, even though we did not have a determined plan on how the implementation would be. We didn´t have any other choice, but it worked*".

With a similar perception, some of the interviewees stated that digitalization became very important for the core business, and new and productive ways of

working arose within the employees. To support this, the Head of Unit Infrastructure also indicated: "*I think the accelerated effect of digitalization was the push we needed*".

Another code identified from positive feedback about accelerated digitization was increase transparency. Respondents stated that after implementing the new digital platform in the organization, this translated into more efficient and transparent ways of working. In this matter, the Head of unit at Strategic HR stated: "*The advantage is that we have become more digitized. How we store and share information in this new platform with common surfaces is an improvement and it increases transparency*".

Furthermore, there was an impression that this big step brought better quality in some processes and the abolition of certain manual steps. The Head of Regional Executive Office pointed out that: "*The increased digitalization meant that we had everything gathered in the same place. Everything is available and transparent; we can share it with everyone, and it makes us more productive*".

Regarding newly implemented digital tools, Region Stockholm´s Purchasing Department introduced a new technology that also waited for more analysis and the launch of it was not planned yet. However, due to the outbreak of Covid-19, the department had to implement it quickly because of being responsible for supplying hospitals. In this regard, the Committee Secretary affirmed: "*I think this platform and the launched of it so quickly supported our way of working and made me and my employees more productive because we had a better overview about our stand, what we buy, who buys it, who our suppliers are, so everything is very transparent*".

Furthermore, all the participants described that accelerated digitalization also brought a new tool that made possible to sign documents online using personal digital identifications. This reduced time, deleted unnecessary steps and increased transparency within the organisation. Here, the Committee Secretary stated: "*The fact that we can sign documents online, for instance, is one of the biggest changes at Region Stockholm. We can sign directly and that saves a lot of people´s time*".

Better ways of communication was another code. This is because the accelerated digitalization in the organisation with the new implemented platform made it possible to interact differently. The head of Regional Executive Office explained that: "*The good thing is that we can be more effective. It is easier to contact people, work together and share information*".

To support this idea, the Head of unit Infrastructure stated: "*To be able to have digital meetings, a more transparent information sharing and not traveling long distances is great! That was a big jump to effectiveness and higher employee productivity*".

In this aspect, all participants agreed that this new digital platform that facilitates communication significantly made everybody´s job easier. the Head of unit at Strategic HR explained: "*Many good changes happened! With the use of this new platform to communicate, share information, etc, our core business got better*".

When it comes to the negative perceptions of an accelerated digitalization, one of the patterns was less social interaction.

Almost all participants said accelerated digitization led to a reduction in social interaction and networking with colleagues, which they felt had some negative impact on employee productivity, at least in the early phase of the shift. The Head of Regional Executive Office supported this by saying: "*The bad thing is that we didn´t meet people IRL*" (in real life).

According to one of the respondents, for some employees, the less social interaction meant some difficulties in their work with other departments. However, that was going on until the new digital platform was introduced. The Purchasing Director pointed out that: "*The negative part was that we only met people in our own function. It was not much horizontal work and that was negative for the organisation. So, the social part and the possibility of exchanging knowledge between employees from different departments was affected negatively*".

Additionally, the other identified pattern within the negative perceptions of an accelerated digitalization was dependency on technology. In that matter, some of

the respondents stated that when technology didn´t work, everyone at the organisation was very vulnerable, and that could have affected employees' productivity. The Head of unit at Strategic HR stated: "*For example, when internet goes down while you are sitting at home and working, that makes you very dependent*".

In the same way, the Committee Secretary expressed: "*We are very dependent on different platforms and connection to internet*".

Finally, even though balance in private and working life has been identified as a pattern within positive aspects that could drive employees' productivity, some of the participants also stated that there could be something negative about it. That was because people could be working longer days without noticing it. For that reason, blurred line between work and private life had been identified as a code in the theme "Drivers and barriers to digitalization".

In many cases, it might be difficult to disconnect from work and that has represented in some worries among the employees. For instance, the Head of unit at Strategic HR affirmed that: "*I finish working at 3 pm, then I leave to pick my kids up at kindergarten, then I go back home, make dinner, and start working again at 7:30 pm a couple of hours more. What is difficult here is to put a line between work and private life, even though I can manage my time better*".

Similarly, the Head of Regional Executive Office supported this by saying: "*I can combine my personal and professional life. However, private life and working life get blurred*".

5.4   Digitalization in the future

The patterns or codes that were identified in this section are new skills and ways of working, which can be transferred to achieving better results, time efficiency and easier access to information.

All participants agreed with the perception that digitalization will develop even more, having an impact on how we work today. the Head of Regional Executive Office supported this by saying: "*I think some years ahead we will have Artificial*

Intelligence that will make some of the tasks we do today. It will affect and have an impact on us, but I think productivity will go up. In other words, we will use the human brain in a more efficient way".

In a similar way, there was an idea that digitalization would bring more efficiency because of the new skills employees could gain. In this matter, the Committee Secretary stated: "*I´m very positive to everything that gets digitalized. I see a bright future ahead, but it´s important to be selective and make sure the new technologies implemented will contribute to everyone´s productivity and after a while, when we all realized the new reality, we got more efficient".*

Similar opinion shared the Head of unit at Strategic HR when they stated that: "*The good thing is we could be more effective, with shorter meetings, many people could concentrate more at home".*

Workplaces have changed from purely work office to hybrid model. The Purchasing Director said: "*I feel it's nice not to have to leave home and the home office to go to work every day of the week*. Interviewees stated that they work mostly from home".

Clearly about the new ways of working and used tools, mentioned the Purchasing Director: "*We found new ways of work and it got better and better and I think technology is good. It supports our way of working. The use of more technology has helped me and my employees to make a better work. We have a new tool that makes possible for us to analyse out stand, what do we buy, who buys it, who are our suppliers, etc. That tool came along after covid19 outbreak".*

In addition, the Committee Secretary said: "*We understood that all meetings did not need to be physical. Not every meeting had to happen either".*

Finally, the Head of Regional Executive Office stated: "*I think that we produce more, we do more, and we have become more efficient when we can sit at home. There are fewer interruptions and more concentrated work".*

6 DISCUSSION

In this chapter, the results of the research are presented using some of the main topical areas of the thesis, where the correlation between theory and findings is made. In addition, the research question is answered. Finally, the practical and theoretical implications, aspects such as validity, reliability and limitations and conclusions and recommendations for the future are presented.

6.1 The effects of digitalization on employees' productivity in service organizations

Due to COVID-19, many organizations have changed, and governmental measures, i.e. lockdown, have forced companies to rethink their business models and adapt to new reality, which has become more digital than before (Amankwah-Amoah, et al., 2021). In this sense, the empirical findings suggest that the selected case company (Region Stockholm) was not an exception and the measures had a big impact on its business and became more digital than before due to the outbreak of COVID-19. Therefore, the authors have investigated the effects of an accelerated digitalization due to the COVID-19 outbreak on employees' productivity in the selected public case company.

6.1.1 Drivers of employees' productivity

The context of the authors' investigation is a service organisation. Therefore, employee productivity in service organisations became a crucial concept in the research. According to Nda and Fard (2013) employees' productivity is shown in a high satisfaction of clients and employees, performing a service with proper quality, at the minimum possible cost, guaranteeing the maximum level of production. Additionally, Bhatti and Qureshi (2007) expressed that productivity measures both efficiency and effectiveness. Summing up, several terms have been used to explain what employees' productivity is, such as organizational performance and employees' performance. Employee performance reflects in the results, and this affects the performance of the organization (Farooq and Sultana 2022).

Having in mind these previous definitions of employees' productivity in service organisations, it could be said that they are aligned with the findings. The interviewed managers shared a common and overlapping view of employees' productivity, showing their perception about how important effectiveness is and how it contributes to higher levels of employees' productivity. According to the managers, to be productive in a service organisation, employees should be result-oriented. Moreover, staying focused on results increases effectiveness. What is interesting is that not all resources were important for managers, such as time spent on delivering result.

In addition, what drives employees´ productivity is also an important aspect to this study because it gives a better picture of certain work-related aspects and how those affect employees and the rapid digitalization in the working place. Bedarkar and Pandita (2014) have also implicated the correlations between productivity drivers (leadership, work-life balance, organizational performance, communication) and employee engagement, which leads to improved employees' productivity as well as better company performance.

The authors have structured interviewees answers in four themes. One of those themes is "Drivers of employee productivity". Within this theme, there are four patterns that were identified from the interviewees´ answers when they talked about what they thought drives employees' productivity. Those are trust, balance in private and working life, clarifying goals and leadership, which could be connected to what Bedarkar and Pandita (2014) suggest in the previous paragraph.

The empirical findings suggested that trust was a crucial factor because it gave a feeling of freedom to employees, and it drives engagement. It is somehow also related to enhancing work-life balance. In that sense, the managers believed that the new method of working, remote or hybrid, that was taken into place due to the outbreak of COVID-19 is in line with that theme (drivers of employees' productivity). Employees who are trusted and can balance their work-life seem to be more productive and effective at work.

Goals are another factor which should be clear – this relates purely to communication. The respondents believed that communicating goals in a clear way would lead to the higher engagement of the employees. In addition, most of the respondents believed that good leadership was important since it creates engagement and bonds within the teams. Those characteristics are therefore connected to and related to what Bedarkar and Pandita (2014) suggest in their research. In this sense, all the respondents supported the idea of hybrid work as a good model for employees. In terms of trust, freedom and work life balance, the hybrid model gives much more flexibility to employees. And at the same time, it also tests the levels of managers´ leadership.

6.1.2 Drivers and barriers to digitalization

Speaking about digitalization, the COVID-19 outbreak has changed business models thanks to accelerating the current global trend towards promoting new technologies to facilitate remote working in service organizations (Lozada, 2020). Top driver of digitalization is to improve efficiency of operations, (Parviainen et al 2017). This is related to the empirical findings since the perceptions of the respondents about digitalization was that it is important and necessary for the core business. From the empirical findings, it can also be said that the common perception is that digitalization brings many opportunities and benefits on employee productivity. Additionally, the results of the interviews showed that the accelerated digitalization has been appreciated and was received as important and necessary. Even some of the respondents expressed that the outbreak of COVID-19 was the "push" they needed in order to become more digitalized. The empirical findings showed that digitalization brought better ways of communication and increased transparency which makes it possible for employees to work more effectively. Additionally, new digital tools allow better business processes and with the elimination of certain manual steps, the internal productivity of the workforce has improved.

Moreover, Parviainen et al (2017) argue that digitalization also leads to internal efficiency due to better processes, better quality and the elimination of manual steps. The empirical findings support this theory because the respondent managers were mostly happy to digitalize processes, tools and workplaces and

they stated it was the necessity. The managers and their employees were happy to implement digital platforms as they could better organize their work and information systems. Sharing ideas, documentation became easier and timesaving.

Additionally, another factor is monitoring and assessing the performance of processes, improving control of production and impacting resource efficiency (Branca et al 2020). Drawing from the interviews, this is related to what some of the respondents stated when they described how different new digital processes and tools were taken into place, and how those improved the way of working in the organisation.

Since digitalization is not fully developed, it also has its barriers. According to Parviainen et al (2017), digital transformation hasn´t ended with success in some service organisations because they were not able to switch their processes and ways of thinking. Furthermore, one of the most common obstacles for digitalization is a deficit of technical skills (Parviainen et al 2017). However, the respondents did not mention anything about facing problems because of a deficit of technical skills. On the contrary, the common perception is that everyone could make a good and efficient use of the digital tools.

Furthermore, Galanti et al (2021) argue that the increased digitalization and thus remote working, affects the social context of employees and it can create the perception of isolation. This statement is very aligned with the empirical findings of the research since the general perception of the respondents was that the accelerated digitalization has led to less social interaction and sometimes even less networking with employees.

Looking at the future, the common idea of the respondents was that digitalization will develop more, and it will have a greater impact on service organisations. The respondents believed that digitalization would bring time efficiency and an easier access to information. This perception can be connected to what Cijan et al (2019) state in their research. They suggest that thanks to digitalization, employees can communicate faster which also makes the organization more efficient and decentralized.

To sum up, digitalization has had a positive effect on employee productivity working in service organizations. The increased digitalization that came along with the outbreak of COVID-19 has shown positive effects and the new ways of working in terms of hybrid work and the use of new digital tools contributes to employees being more efficient, which in turn leads to higher employee productivity.

6.2   Theoretical and practical implications

The results of this study are important to already existing literature since it can contribute to a conceptual framework regarding how employees´ productivity in service organizations is affected by an increased digitalization. The fast-changing operations and business environments due to the outbreak of COVID-19 impacted employees. Therefore, it is important for businesses to understand and listen to their employees in order to implement new working styles and methods that might contribute to their productivity.

Results of this thesis can give better understanding of how employees' productivity was affected and impacted by an increased digitalization. This could contribute to the improvement of the digital work environments in the future. With understanding of the limitations below, findings of the thesis could still possibly be applied to similar service organizations since the accelerated digitalization due to the outbreak of COVID-19 has impacted a lot of businesses and organizations, and thus their employees.

6.3   Evaluation of the results: Validity, reliability and limitations

The authors of this thesis provided the necessary validity and reliability by using different data collection methods. Those were a questionnaire and interviews with a proper length in order to have time enough to capture as much valuable information as possible. In addition, all answers were carefully transcribed to make sure all participants have a voice.

However, the authors of this research were aware of the criticism that case studies face (Yin 2009) and that this single case study´s outcome is not supposed

to be completely generalized. Nevertheless, the authors of this research conducted this study having in mind that if a later researcher conduct the same case study with the same procedures, they should arrive at the same findings. That is why this research were made with many steps to make sure the collected data and information was used correctly.

Moreover, the anonymity of the participants has been an important issue for the authors of this study. In that matter, anonymity can be guaranteed externally, but the internal anonymity might not be completely guaranteed for the organisation´s audience. This issue could possibly have affected the reliability of the interviews.

A big limitation of this study is that it only studied one organization. In order to be able to draw better conclusions, we would have preferred to have more empirical data. In particular, we had wanted to study more organizations. This would have given us a better understanding of how an increased digitalization has affected employee productivity in service organizations. Even though Region Stockholm is a big organization, it only operates in one city. Therefore, it would have been interesting to compare several organizations and see if there are any differences between them.

Furthermore, there is a geographical constrain since all participants are Swedish workers. This creates the inability to fully transfer the results to other organizations or it might not be applicable in other countries. Additionally, not all interviews were carried out face-to-face. Some of them were held online since one of the authors of this thesis is not in Sweden. This is identified as a limitation since interviews held physically usually give more accurate information and results since body signs can be interpreted easily. Finally, language barrier is also a limitation in this research. Some of the interviews were held in Swedish because the respondents felt more comfortable answering in their mother tongue. This forced us to translate those interviews to English and some perceptions or interpretations could have been lost in the translation process.

6.4 Conclusions and recommendations for future research

Due to the fundamental digitization of social and economic life, the "on" and "offline" image of the world is gaining strength. The spread of COVID-19 has led to the dysfunction of the known ecosystem, and the power of human isolation and the lockdown of economies have significantly influenced the behaviour of societies, governments and, consequently, companies. Changes revealed the area of megatrends, consumer habits and global supply chains. Unexpectedly, the pandemic resulting in digitization has become another determinant of the new quality of processes, phenomena and business models.

It is hard to disagree with the statement that digitization "forced", carried out under the pressure of circumstances, may not bring as many benefits as that focused on improving entire business processes. However, digitalization by force or voluntary has become a fact.

At the same time, the trend of transferring both work and social life to the Internet has made us realize how important digital competences are in today's world and how many specialists in the field of cybersecurity and modern technologies we need. The pandemic has undoubtedly accelerated the digital revolution and it is a change that can no longer be reversed. It is important that we adapt to the new reality in a way that will bring the greatest benefits to society.

REFERENCES

Almeida, F., Santos, J. D., & Monteiro, J. A. (2020). The challenges and opportunities in the digitalization of companies in a post-COVID-19 World. IEEE Engineering Management Review.

Amankwah-Amoah, J. Khan, Z., & Wood, G. (2020). COVID-19 and Business Failures: The Paradoxes of Experience, Scale and Scope for Theory and Practice. European Management Journal.

Amankwah-Amoah, J., Khan, Z., Wood, G., & Knight, G. (2021). COVID-19 and digitalization: The great acceleration. Journal of Business Research.

Anderson, D., & Kelliher, C. (2020). Enforced remote working and the work-life interface during lockdown. Gender in Management: An International Journal.

Balk, B. M. 2021. Productivity. Concepts, Measurement, Aggregation, and Decomposition. 1st edition. London. Springer Nature Switzerland AG.

Bhatti, K. K., and Qureshi, T. M. (2007). Impact of employee participation on job satisfaction, employee commitment and employee productivity. International review of business research papers.

Bedarkar, M., & Pandita, D. (2014). A study on the drivers of employee engagement impacting employee performance. Procedia-Social and Behavioral Sciences.

Bernard, H. R., (2011). Research Methods in Antropology. 5th edition, AltaMira Press.

Bowen, J., & Ford, R. C. (2002). Managing service organizations: Does having a "thing" make a difference?. Journal of management.

Branca, T. A., Fornai, B., Colla, V., Murri, M M., Streppa, E., and Schröder, A. J. (2020) The challenge of digitalization in the steel sector. Metals.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative research in psychology, 3(2), 77-101.

Braun, V., & Clarke, V. (2012). Thematic analysis. American Psychological Association.

Bryman.A (2008) 3rd Ed. Social Research Methods, Oxford University Press, London UK.

Cijan, A., Jenič, L., Lamovšek, A., & Stemberger, J. (2019). How digitalization changes the workplace. Dynamic relationships management journal.

Doerr, J. 2019. Measure What Matters: OKRs: The Simple Idea that Drives 10x Growth. 5th edition. London. Penguin.

Donthu, N., & Gustafsson, A. (2020). Effects of COVID-19 on business and research. Journal of business research.

Dutta, N., Jadav, N., Tanwar, S., Deva., H. K. & Pricop, E. (2022). Cyber Security: Issues and Current Trends. 1st edition. Singapore: Springer Singapore.

Eurofound (2020). Covid-10 could permanently change teleworking in Europe. Accessed 3 October 2022. https://www.eurofound.europa.eu/news/news-articles/covid-19-could-permanently-change-teleworking-in-europe

Flick, U., von Kardoff, E., & Steinke, I. (Eds.). (2004). A companion to qualitative research. Sage.

Galanti, T., Guidetti, G., Mazzei, E., Zappalà, S., & Toscano, F. (2021). Work from home during the COVID-19 outbreak: The impact on employees' remote work productivity, engagement, and stress. Journal of occupational and environmental medicine.

Golafshani, N. 2003. Understanding Reliability and Validity in Qualitative Research.

Greengard, S. 2015. The internet of Things. MIT Press. Cambridge.

Guba, E. & Lincolm, Y., 1994. Competing paradigms in qualitative research. Handbook of qualitative research.

Gupta, S. 2018. Driving Digital Strategy: A Guide to Reimagining Your Business. Boston. Harvard Business Review Press.

Hanaysha, J. (2016). Examining the effects of employee empowerment, teamwork, and employee training on organizational commitment. Procedia-Social and Behavioral Sciences.

Hanaysha, J. (2016). Work Environment and Organizational Learning as Key Drivers of Employee Productivity: Evidence from Higher Education Sector. International Journal of Human Resource Studies.

Hjálsmsdóttir A., Bjarnadóttir V.S. (2021). "I have turned into a foreman here at home": Families and work-life balance in times of COVID-19 in a gender equality paradise. Gender, Work & Organization.

Jeong, K. & Philips, D. 2001. Operational Efficiency and Effectivenes Measurement, International Journal of Operations and Production Management. Vol. 21, No. 11.

Jones, M D., Hutcheson, S., and Camba, J. D (2021) Past, present and future barriers to digital transformation in manufacturing: A review. Journal of Manufacturing Systems

Kramer, A., & Kramer, K. Z. (2020). The potential impact of the Covid-19 pandemic on occupational status, work from home, and occupational mobility. Journal of Vocational Behavior.

Lindgren, I., Madsen, C. Ø., Hofmann, S., and Melin, U., (2019). Close encounters of the digital kind: A research agenda for the digitalization of public services. Government Information Quarterly.

Linna, P., Pekkola, S., Ukko, J., & Melkas, H. (2010). Defining and measuring productivity in the public sector: managerial perceptions. International Journal of Public Sector Management.

Lozada, C. (2020). The great acceleration. Retrieved 10.5.2021, from https://www.washingtonpost.com/outlook/2020/12/18/coronavirus-great-acceleration-changes-society/.

Menon, R. (2020). Longer working hours, employee productivity and the COVID-19 economic slump. Accessed March 19.

McIntosh, M. J., & Morse, J. M. (2015). Situating and constructing diversity in semi-structured interviews. Global qualitative nursing research. Accessed 8 september 2022.

Nations, U. (2021). The Impact of Digital Technologies | United Nations. United Nations. Retrieved from https://www.un.org/en/un75/impact-digital-technologies.

Nda, M. M., & Fard, R. Y. (2013). The impact of employee training and development on employee productivity. Global journal of commerce and management perspective.

Onyeaghala, O. H., & Hyacinth, M. I. (2016). Effects of employee selection process on productivity in the public and private sectors: A case of Benue state.

Parida, V. (2018). Digitalization. Addressing Societal Challenges

Parviainen, P., Tihinen, M., Kääriäinen, J., and Teppola, S., (2017). Tackling the digitalization challenges: how to benefit from digitalization in practice. International journal of information systems and project management.

PWC, (2016). Digital Solutions.

Rachinger, M., Rauter, R., Müller, C., Vorraber, W., & Schirgi, E. (2018). Digitalization and its influence on business model innovation. Journal of Manufacturing Technology Management.

Ravi, N., & Anulakshmi, M. R. (2021). Work from Home and Employee Productivity during COVID-19. Asian Basic and Applied Research Journal.

Region Stockholm 2022 https://www.regionstockholm.se/om-regionstockholm/Information-in-English1/

Rutkauskas, J., & Paulavičienė, E. (2005). Concept of productivity in service sector. Engineering Economics, 43(3), 35-41.

Saunders, M. N., & Lewis, P. (2012). Doing research in business & management: An essential guide to planning your project. Pearson.

Saarikko, T., Westergren, U. H., & Blomquist, T. (2020). Digital transformation: Five recommendations for the digitally conscious firm.

Shenton, A. (2004). Strategies for ensuring trustworthiness in qualitative research projects. Education for Information, 22(2), 63-75.

Sickles, R. C. & Zelenyuk, V. 2019. Measurement of Productivity and Efficiency. Theory and Practice. Cambridge: Cambridge University Press.

Singh, H. (2013). Employee Productivity of Private Sector Banks in India. International Journal of Management and Social Sciences Research.

Stake, R. 2005. Case study: Handbook of qualitative research. Thousand Oaks. 412-441.

Stenbacka, C. (2001). Qualitative research requires quality concepts of its own. Management Decision.

Sweden´s central bank (2021). Long-term effects of the pandemic on the Swedish economy, article in Account of monetary policy 2021. Accessed 24 October 2022. (riksbank.se)

Hult, H. V., Hansson, A., & Gellerstedt, M. (2020). Digitalization and physician learning: individual practice, organizational context, and social norm. The Journal of continuing education in the health professions.

Yin, R. K. 2009. Case Study Research: Design and Methods. Sage Publications. 17-85.

APPENDICES

Appendix 1.   Interview questionnaire

Appendix 2.   Manuscript of interviews

Appendix 1 1 (2)

Personal questions

1. Where do you work?

2. What is your role in the organisation? How would you describe your role?

3. What kind of service do you offer to your customers?

Questions regarding productivity

4. With your own words, how would you describe productivity?

5. How are you contributing to the organisation by being productive?

6. How do you make sure to be as productive as possible in your working life?

7. How do you make sure that your employees are so productive as possible in their working life?

8. Do you think that your employees´ working abilities has been affected due to Covid-19? If yes, elaborate. If no, elaborate.

Questions about Covid-19 and digitalization

9. In general, what do you think about the accelerated digitalization in businesses?

10. Do you work remotely? If yes, how often?

11. In terms of how you use technology, how has your environment at work changed since the outbreak of Covid-19?

12. Have your working abilities changed from prior to Covid-19?

Appendix 1 2 (2)

13. Do you think that employee´s working abilities has changed from prior to Covid-19?

14. Would you say that there are more advantages when using more technology? If so, what kind of advantages?

15. Are there any disadvantages of using more technology?

16. Would you say that the increase in digitalization makes you more productive? If yes or no, elaborate why and how.

17. Would you say that the increase in digitalization makes employee´s more productive? If yes, elaborate. If no, elaborate.

18. Have you experienced positive or negative effects when it comes to your productivity at work since the outbreak of Covid-19?

19. Have you experienced positive or negative effects when it comes to your employees 'productivity at work since the outbreak of Covid-19?

20. How do you see the digitalization journey in the future in your organisation and do you think it will impact your and your employees´ productivity skills?

Head of unit at Strategic HR

Personal questions

1. Where do you work?

I work in Region Stockholm

2. What is your role in the organisation? How would you describe your role?

I work as a Unit manager at the regional management office in a department called Strategic HR. As a unit manager, I am the manager and leader of my employees. There are 10 of us who work in a very broad area, many different issues, so it takes quite a lot of time to coach, lead and control them. Then I have some important deliveries to my boss who is the head of the department. I also work with various issues and am part of various groups and steering groups.

3. What kind of service do you offer to your customers?

My unit works in various subject areas with working environment issues, equality, multidisciplinary, leadership initiatives, skills planning, some with employer brands. We develop policies and guidelines, but also joint initiatives and leadership programs, trainings that affect all businesses, and that's how the whole department works, also the other unit that works more with contractual issues, collective agreements, follow-up statistics

Questions regarding productivity

4. With your own words, how would you describe productivity?

Productivity for me is that we deliver what we need to on time with good quality and meet goals and assignments that we receive from above all politics, the regional council through the budget. We deliver quality and what we need on time.

5. How are you contributing to the organisation by being productive?

Appendix 2 2 (20)

I make sure to provide the conditions for my employees to be able to deliver on time and against the set goals, and it also applies to myself as I deliver things that I do it with quality and on time and requested content, as well as by providing conditions to my employees, I make sure they are also productive.

6. How do you make sure to be as productive as possible in your working life?

7. How do you make sure that your employees are so productive as possible in their working life?

I make it clear why they do things, clarify the goals and help when they encounter obstacles. My employees must be able to do their job without unnecessary hiccups and unnecessary resistance, and that is why I am here.

8. Do you think that your employees´ working abilities has been affected due to Covid-19? If yes, elaborate. If no, elaborate.

With covid, we got the opportunity to work from home and my employees and I think that we produce more, we do more, and we have become more efficient when we can sit at home. There are fewer interruptions and more concentrated work, but at the same time we lose the context and the dialogue with our colleagues.

Questions about Covid-19 and digitalization

9. In general, what do you think about the accelerated digitalization in businesses?

I don't think we would have come this far if it hadn't been for us being forced, I think it was a necessary push.

10. Do you work remotely? If yes, how often?

I do, 2-3 times a week

11. In terms of how you use technology, how has your environment at work changed since the outbreak of Covid-19?

Appendix 2 3 (20)

It has been of great importance for digitization, the tools have improved due to demand.

12. Have your working abilities changed from prior to Covid-19?

For my own part, I feel it's nice not to have to leave home and the home office to go to work every day of the week. It has meant greater calmness, you become less stressed. At the same time, I miss the social part, which makes it fun to be in the office a couple of times a week. Then it's a challenge to lead remotely, which requires continuous follow-ups all the time, meetings, etc. because we don't meet daily in the office. Control has decreased because I don't really know what they do during the day, if they are in the laundry, but I do see what they produce. It's also more difficult to see if any om my employees is unwell or need help.

13. Do you think that employee´s working abilities has changed from prior to Covid-19?

At the beginning of Covid, the employee's motivation to perform their jobs was affected, probably because of the new situation. But overall, I think their abilities have changed to the better after Covid. I think that when they have bigger possibilities of mixing working life and private life, there are positive results. Many feel less stressed when they can work from home.

14. Would you say that there are more advantages when using more technology? If so, what kind of advantages?

The advantage is that we have become more digitized. What we work with in the form of documents, and such is more often stored on common surfaces, which increases transparency. We have found ways of working where we can work in the same document via teams, for example, which I think is an improvement.

15. Are there any disadvantages of using more technology?

Appendix 2 4 (20)

The disadvantage of using more technology is that when the technology does not work, you are very vulnerable. For example, if the internet goes down while you are sitting at home and working, we are very dependent.

16. Would you say that the increase in digitalization makes you more productive? If yes or no, elaborate why and how.

The increased digitization means that we have everything gathered in one and the same place. Everything is available and transparent, and we can share it with everyone, it makes us more productive. I also believe that the increased digitization has meant that we can work from home, which I see as an advantage, and which also increases our joint productivity.

17. Would you say that the increase in digitalization makes employee´s more productive? If yes, elaborate. If no, elaborate.

In our case at the region, so actually it is working from home that is the advantage, I think to do that you increase productivity but but for us to be able to work from home

18. Have you experienced positive or negative effects when it comes to your productivity at work since the outbreak of Covid-19? 19. Have you experienced positive or negative effects when it comes to your employees 'productivity at work since the outbreak of Covid-19?

After the outbreak and the first period of the first year, we worked very little on what we were supposed to and very much on other crisis management issues and urgent issues. Therefore, we could not be productive for a period before the change came. We had to switch from physical activities to more digital ones, which also affected our productivity while we got used to the new normal.

20. How do you see the digitalization journey in the future in your organisation and do you think it will impact your and your employees´ productivity skills?

Appendix 2 5 (20)

I think we have become more efficient. It was because of covid that we started offering digital training and activities for the public and other stakeholders and I think that is a contribution to everyone's productivity. Instead of having to sign up for a course session and go to a venue, we play a film that is available to everyone around the clock.

Purchasing Director

Personal questions

1. Where do you work?

At Region Stockholm as a purchasing director.

2. What is your role in the organisation? How would you describe your role?

We work in strategic level. RS has a decentralized purchasing organization. I am a manager to 4 people to be operative.

3. What kind of service do you offer to your customers?

We support the political level and work with development regarding digitalization and implementing category management at Region Stockholm.

Questions regarding productivity

4. With your own words, how would you describe productivity?

Production per time unit, I would say.

5. How are you contributing to the organisation by being productive?

I think efficiency is also important. By being a coaching leader, supporting my employees, make it easier for them. Trust is important. It is about making people grow, make them develop.

6. How do you make sure to be as productive as possible in your working life?

Appendix 2 6 (20)

7. How do you make sure that your employees are so productive as possible in their working life?

8. Do you think that your employees´ working abilities has been affected due to Covid-19? If yes, elaborate. If no, elaborate.

During Covid, the first 3 months was a shaking period. Productivity did not go up but I don't think it went down so much either. I took time to find new ways of working. We had to work using the tools we had. But as it continued, we found new ways of work and it got better and better. And the end, the productivity was higher than before.

Questions about Covid-19 and digitalization

9. In general, what do you think about the accelerated digitalization in businesses?

2 months before the pandemic, we were discussing about how to implement teams to our employees, but the discussions were long and we had not decided anything. Suddenly, 2-3 months after, we had to. Even though we did not have a determined plan on how that implementation would go, we had to! We did not have any other choice. And it worked! So, the accelerated digitalization is very positive.

10. Do you work remotely? If yes, how often?

Yes, several days a week.

11. In terms of how you use technology, how has your environment at work changed since the outbreak of Covid-19?

When it comes to contacts with other organisations, it´s much easier since they also use digital tools. Information is more accessible, sharing information is better, work together and makes productivity goes up.

12. Have your working abilities changed from prior to Covid-19?

It has due to the fact that I worked more at home. I think better at home, I think the working place is more a meeting point, like a network, you go to the office to meet people. But at home, you can actually work and be more productive at home.

13. Do you think that employee´s working abilities has changed from prior to Covid-19?

It is easier to get in contact with people. It is easier to multitask in a digital meeting than in a normal meeting.

14. Would you say that there are more advantages when using more technology? If so, what kind of advantages? 15. Are there any disadvantages of using more technology?

I think technology is good. It supports our way of working. The use of more technology has helped med and my employees to make a better work.

We have a new tool that makes possible for us to analyse out stand, what do we buy, who buys it, who are our suppliers, etc. That tool came along after covid19 outbreak, so technology for most time is positve.

16. Would you say that the increase in digitalization makes you more productive? If yes or no, elaborate why and how.

Of course, since we can use more technology, we can be more productive. We use the time more efficiently. For instance, before covid when we worked at the office, we had meeting, then we worked at the desk, then to the next meeting, etc, at it is a lot of waste of time. Today, we work in front a screen and I think it makes us more productive. But the negative part is that we only meet people in the own function. It is not so much horizontal work and that is negative for the organisations as a system. So, the social part and the possibility of exchanging knowledge between employees from different departments might be affected negatively.

Appendix 2 8 (20)

17. Would you say that the increase in digitalization makes employee´s more productive? If yes, elaborate. If no, elaborate.

Yes, it is easier to combine working life and private life. That can lead to a higher productivity rate.

18. Have you experienced positive or negative effects when it comes to your productivity at work since the outbreak of Covid-19? 19. Have you experienced positive or negative effects when it comes to your employees 'productivity at work since the outbreak of Covid-19?

Employees felt lonely and that affected their productivity. For some of them, it was difficult to be part of that transition when all of us had to work from home. It was difficult to learn using some platforms. It was a period of working 12-14 hours due to the lack of supply for hospitals, etc. It was very challenging. But we gave responsibility to our employees, and they responded, even though some individuals got more affected and perhaps worked less.

20. How do you see the digitalization journey in the future in your organisation and do you think it will impact your and your employees´ productivity skills?

I think some years ahead we will have AI that will make some of the tasks we do today. We will get other stuff to do. It will affect and have an impact on us but I think productivity will go up, we still use the human brain in a more efficient way.

Head of Regional Executive Office

Personal questions

1. Where do you work?

At the Regional executive office where I support the political organisation. We keep official records of the regions and archives. Head of unit with a group of 11 people.

Appendix 2 9 (20)

2. What is your role in the organisation? How would you describe your role? 3. What kind of service do you offer to your customers?

We support our elected officials with their duties. We give them proposals on how to take decisions, making sure the original assembly have papers to debate and discuss. We also support members of staff in how to right proposals for political decisions. But we work primary for our elected officials.

Questions regarding productivity

4. With your own words, how would you describe productivity?

The output you produce in a given time. My input to my employees is: I won't keep records of how much you expend at your work. For me, it doesn't matter if you work 7 or 9 hours. The important thing is what you produce. So productivity is the output of an employee in a given time.

5. How are you contributing to the organisation by being productive?

First of all, the political objective of our elected officials is to allocate funds to our core business, which is health care and mass transit. So, we have a value by supporting our politicians, but we also make sure to use that money as good as possible. So, if we are productive, we can allocate funds wise in the organisation.

6. How do you make sure to be as productive as possible in your working life?

An old-school workplace doesn´t work. Coming at 8 o'clock, and going at 5 pm is an absolute working environment. The time I spend working is what´s important. When I work, I produce, I'm productive, I do things. When I work, I thinking I am efficient, I try to do as many tasks as possible during the time I sit in front of my computer. For me as a manager, It is a necessity to be productive and I achieve that by focusing completely on my tasks.

7. How do you make sure that your employees are so productive as possible in their working life?

Appendix 2 10 (20)

I try to be transparent with my own priorities and what I expect from them. It is the output I am interested in, not the hours you spent at work. It doesn´t matter how many hours they spend at work. So, trust it is important for me. I trust my employees until they prove otherwise. By giving them trust, being transparent and being an example, I think I make sure they are productive. If I don´t see they are being productive, I need to follow up why.

What do you think about giving employees freedom? I think it is a good way to go. I give my employees responsibilities and I expect them to do their work. Trust and freedom are important!

8. Do you think that your employees´ working abilities has been affected due to Covid-19? If yes, elaborate. If no, elaborate.

Yes! I have a team of 17 people and all of them were at the end of their careers. I also recruit some young people during this time, and it was hard to get them involved. All my employees were working with this new situation of covid and it was tricky for me to identify their abilities working from home. One of my employees was young and new in her roll, and her abilities got affected by the situation and the new way oof working. She never settled in and left after 6 months ago.

What suffered a lot was the team. Forming a team, having interactive meetings was difficult and get my employees involved to that meeting online was hard.

Questions about Covid-19 and digitalization

9. In general, what do you think about the accelerated digitalization in businesses?

It is not black and white. The meeting of the original assembly and the political bodies that we support went from physical to online. So, instead of meeting with 199 people being able to vote in a former meeting, it was difficult to set up a properly way to continue working. It also took time to use the new system

(Teams). It was also a challenge to define how to store information, people started using teams and put a lot of information that shouldn't be put there.

The interest on the level of knowledge of employees makes difference. More senior stuff, they were not interested in learning new systems and people were upset. But I think digitalization is very important and necessary for our core business and we have found good ways to work together.

10. Do you work remotely? If yes, how often?

Yes, a couple of times a week.

11. In terms of how you use technology, how has your environment at work changed since the outbreak of Covid-19?

Implementing new systems such as teams, new store platforms.

12. Have your working abilities changed from prior to Covid-19?

It is easier now since I can work from home. I can combine my personal and professional life. However, private life and working life get blurred. The hybrid forms are detrimental to productivity, I think. That is why I think it is good we have days at the office. It is hard to manager people both online and in place.

13. Do you think that employee´s working abilities has changed from prior to Covid-19?

Some people are more productive at home now. So, his working abilities have changed for the good. Other people maybe not. But in general terms, I think that my employee´s working abilities are better now when they have more freedom and trust from me as a manger.

14. Would you say that there are more advantages when using more technology? If so, what kind of advantages?

Appendix 2 12 (20)

I would say positive advantages. It is easier to contact people, to share information, work together. There are also negative consequences. For instance, it is difficult to involve a new team in the job if you are not at the office.

15. Are there any disadvantages of using more technology?

We are very dependent of different platforms and connection to internet.

16. Would you say that the increase in digitalization makes you more productive? If yes or no, elaborate why and how.

17. Would you say that the increase in digitalization makes employee´s more productive? If yes, elaborate. If no, elaborate.

Yes. Where we are now with a hybrid workplace, we are in a plus scale. When we did not see a lot, I think it was difficult. Now we try to find our ways to be productive and to make sure my emloyees are productive.

18. Have you experienced positive or negative effects when it comes to your productivity at work since the outbreak of Covid-19?

Already answered.

19. Have you experienced positive or negative effects when it comes to your employees 'productivity at work since the outbreak of Covid-19?

Already answered.

20. How do you see the digitalization journey in the future in your organisation and do you think it will impact your and your employees´ productivity skills?

The new signing system that was launched. Managers and employees can sign from any device, everything is online. This makes us more productive. The internet page of Region Stockholm can be accessed smoothly, the intranet, the information is more accessible for everyone. All of that happened because of the acceleration of digitalization that the covid-19 outbreak caused.

Appendix 2 13 (20)

Committee Secretary

Personal questions

1. Where do you work?

Region Stockholm assembly

2. What is your role in the organisation? How would you describe your role? 3. What kind of service do you offer to your customers?

Committee Secretary. What I do is to be responsible for journaling system. Local specialist for the system and I do improvements in the things that we need to, that should be added, etc. I also support end users and some political errands.

Questions regarding productivity

4. With your own words, how would you describe productivity?

High level of output without the need of extra input. Basically, productivity is a high output of thing I can do with a few extra steps.

5. How are you contributing to the organisation by being productive?

My role as a committee secretary is about being a link between the political power and the government side of Region Stockholm. So, I also lead projects with different subjects. I am an important link between those two parts, and I need to make sure that my employees and I have the right conditions to perform our jobs.

6. How do you make sure to be as productive as possible in your working life?

7. How do you make sure that your employees are so productive as possible in their working life?

8. Do you think that your working abilities has been affected due to Covid-19? If yes, elaborate. If no, elaborate.

Appendix 2 14 (20)

They got affected at the beginning. The first 3 months was almost paralized. For me, in my roll, it was difficult to have meetings with all the politicians, so the decision-making process got interrupted. After a while, when we all realized the new reality, we got more efficient. We understood that all meetings did not need to be physical. Not every meeting had to happen either. That was also a way my work got more productive.

Questions about Covid-19 and digitalization

9. In general, what do you think about the accelerated digitalization in businesses?

Positive. Many good changes that make our job easier. With the use of new platforms to communicate, share information, etc, our core business got better.

10. Do you work remotely? If yes, how often?

Yes, several days a week.

11. In terms of how you use technology, how has your environment at work changed since the outbreak of Covid-19?

I always been a very digital person. My own work hasn't really changed much. What it changed was how my colleagues work. They needed to shift to more digitalized world and that changed my work in a positive way.

12. Have your working abilities changed from prior to Covid-19?

13. Do you think that employee´s working abilities has changed from prior to Covid-19?

14. Would you say that there are more advantages when using more technology? If so, what kind of advantages?

Definitely! For one, it is easier to be organized and structured when using technology.

15. Are there any disadvantages of using more technology?

The social part is also less, the contact with colleagues got affected.

16. Would you say that the increase in digitalization makes you more productive? If yes or no, elaborate why and how.

Yes, less time you use going to the office can be used on doing the job. Having a better access to information makes people more productive. The use of different technological tools contributes to employees being more productive. The fact that we can sign documents online, for instance, is one of the biggest changes at Region Stockholm. We can sign directly and that saves a lot of people´s time.

17. Would you say that the increase in digitalization makes employee´s more productive? If yes, elaborate. If no, elaborate.

18. Have you experienced positive or negative effects when it comes to your productivity at work since the outbreak of Covid-19?

Positive!

19. Have you experienced positive or negative effects when it comes to your employees 'productivity at work since the outbreak of Covid-19?

Most of my colleagues have probably noticed positive effects when it comes to productivity.

20. How do you see the digitalization journey in the future in your organisation and do you think it will impact your and your employees´ productivity skills?

I´m very positive to everything that gets digitalized. Region Stockholm has gained a lot thanks to the news technologies that have arisen in the last years. I see a

bright future ahead, but it is important to be selective and make sure the new technologies implemented will contribute to everyone´s productivity.

RS is going to implement a new connecting with the journaling system in order to process the political matters better. That system will be connected to other systems where information is published.

I use Edit by putting together information there, then I must download the files from there and uploaded them again to another system, only to publish them internally to the committee, and then once we want to publish this information to the public and media, we have to again download those documents and upload them in the webpage. However, in the future, we will upload this on Edit and then from there we can publish the information directly to the media externally. That is going to make the entire process easier.

Head of unit Infrastructure

Personal questions

1. Where do you work?

Head of Unit Infrastructure at the Regional Development Department.

2. What is your role in the organisation? How would you describe your role?

I am head of unit where I am the boss of the unit with 30 employees, working with regional development, also working with investment in infrastructure in the region of Stockholm.

3. What kind of service do you offer to your customers?

We work for the region, for the city of Stockholm, consisting in businesses in the city for regional development, giving them sustainability through projects. We have an investment plan for Stockholm about 10 Billion SEK where we also support the municipalities work with public transport and environment. We work with plans that are aimed to give a better future for the citizens of the city.

Appendix 2 17 (20)

Questions regarding productivity

4. With your own words, how would you describe productivity?

Time vs output, I would say.

5. How are you contributing to the organisation by being productive? 6. How do you make sure to be as productive as possible in your working life?

I think it is not easy to measure this in the public sector. In a private sector, you can measure it easily. We try to do as much as possible with as less time invested as possible, giving an output we think is good for the region.

7. How do you make sure that your employees are so productive as possible in their working life?

I think one important thing is that people feel they have responsibility to do things, that they feel they have power over their own time. That they often feel more energy in solving problems and tasks. Also to have good support, good structure so they can focus on the main tasks. Also important to think about "good enough". We cannot spent a lot of time and money in a certain task if it is not necessary. It is about being effective.

Make people feel they are important for the organisations, not having all the power on the top. It is hard to force people to perform a job with productivity. That is something they need to do by themselves. They should feel they get something back.

8. Do you think that your employees´ working abilities has been affected due to Covid-19? If yes, elaborate. If no, elaborate.

I think you can find both positive and negative things. The bad thing is that we did not meet people IRL. Th good thing is we could be more effective, with shorter meetings, many people could concentrate more at home.

Questions about Covid-19 and digitalization

Appendix 2 18 (20)

9. In general, what do you think about the accelerated digitalization in businesses?

I think is good and important. The accelerade effect of digitalization was definitely a push we needed to. For instance, meetings on Teams were not nothing we used to do, but because of Covid, we started using that platform and it has given them a lot of benefits.

10. Do you work remotely? If yes, how often?

1-2 days from home

11. In terms of how you use technology, how has your environment at work changed since the outbreak of Covid-19?

Mainly teams meeting changed our environment. Our work is a lot of meetings so that was the biggest difference. I think they are quicker and more effective meetings, more concise.

12. Have your working abilities changed from prior to Covid-19?

I think my working abilities are the same. No changes.

13. Do you think that employee´s working abilities has changed from prior to Covid-19?

I have noticed during the pandemic that people act differently. Some people like working at home and feel they are more effective there, while other get really frustrated and need to be at the office in order to feel their jobs are important.

Where we are now, having a hybrid workplace is the best of both worlds.

14. Would you say that there are more advantages when using more technology? If so, what kind of advantages?

Hybrid workplace is an advantage. The technology we use the most is how we use teams. Before we didn´t use it, but now we do. That is a big advantage.

Appendix 2 19 (20)

To be able to have digital meetings, a better way to share information, not traveling long distances is great. That is a big jump to effectiveness and therefore to be more productive.

15. Are there any disadvantages of using more technology?

The miss of social contact, networking.

Also, if employees get so "comfortable" with some technology, it can be used inappropriately and that can affect the productivity of employees. We shouldn´t go too far in a certain direction, it is important to find a "middle way" with balance.

16. Would you say that the increase in digitalization makes you more productive? If yes or no, elaborate why and how. 17. Would you say that the increase in digitalization makes employee´s more productive? If yes, elaborate. If no, elaborate.

Yes! I think it's good for people to work at home part of the week. Easier to find a balance between work and private life. I know the majority of people want to do a good job and feel responsible. When you give them trust and freedom, I think they responds positively and perform a good job where productivity go up.

Also, the fact that we do not need to travel a lot is also a positive factor.

18. Have you experienced positive or negative effects when it comes to your productivity at work since the outbreak of Covid-19?

Answered!

19. Have you experienced positive or negative effects when it comes to your employees 'productivity at work since the outbreak of Covid-19?

Answered!

20. How do you see the digitalization journey in the future in your organisation and do you think it will impact your and your employees´ productivity skills?

Appendix 2 20 (20)

Now we have a lot of systems but sometimes they are not effective. In Region Stockholm, we have a lot of systems and most of them are connected to each other which is a good factor for the organisation. Region Stockholm is investing in other systems that will make our jobs easier since it will take less time to perform them. More accessible information for everyone.