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Leadership in virtual teams during the Covid-19 pandemic

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ABSTRACT:

Due to the Covid-19 pandemic, an accelerated shift to remote work has obstructed traditional working models and methods and advanced adoption of virtual and hybrid work models. Digital-based businesses have been shown to survive without the need for a physical office; it opens the door for new challenges, skills, and opportunities for leaders to thrive in a virtual environment. Critical considerations for e-leaders to address are communication, technology, diversity, trust, and distance. Individual and organizational adaptation to this new reality requires e-leaders to embrace new skills such as communication, building trust, change management, ICT tools, and emotional intelligence to stay competitive in a fast-phased and constantly changing virtual environment. Nevertheless, there is a lack of research in understanding virtual leadership challenges and skills within the private sector during Covid-19. There is also limited information on how leadership has changed or evolved since the pandemic's beginning and its transition to remote work until today's 'new normal'. Prior research focuses more on the employees' experiences in a virtual-only environment, overlooking the leaders' perspectives.

This research aims to investigate the leadership evolution during Covid-19, focusing on challenges faced by leaders and the skills required to lead effectively in a virtual environment during crisis times. The objectives are to identify the skills required by successful leaders in leading their teams and to examine the challenges faced by leaders managing virtual teams during the pandemic as well as investigate how virtual leadership may have evolved from the start of the pandemic until the present day.

The research was a qualitative study based on semi-structured interviews. Eight interviewees who have been leading remote teams during the pandemic participated in the study. The data analysis was based on qualitative content- and thematic analysis. Furthermore, the study was abductive and exploratory in nature.

The results of this thesis suggest that effective leadership in a virtual environment requires general adaptability and flexibility in communication and management styles. Commitment in several areas, such as trust building, good command of handling ICT tools, upholding boundaries in work-life balance, and showing empathy and understanding, were other critical factors of effective leadership. Further, change management and emotional intelligence were mentioned as crucial for success in virtual leadership. All in all, the research suggests that e-leadership during the pandemic has become more complicated, which requires a broad set of skills to address any imminent challenges and the need to adapt to an emerging virtual environment.

Some implications for leaders include doubling down on open communication a priority and making it a priority, building trust with employees through consistent meetings, maintaining a balance between work and personal life, and being adaptable to any emerging e-leadership challenges or skills in the virtual environment.

KEYWORDS: covid-19, pandemic, virtual leadership, e-leadership, virtual teams, technology, remote work, new normal

VAASAN YLIOPISTO**Johtamisen yksikkö**

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TIIVISTELMÄ:

Covid-19-pandemian vuoksi etätöyöhön siirtyminen on nopeutunut, mikä on muokannut ja monimuotoistanut perinteisiä työskentelymalleja ja -menetelmiä ja edistänyt virtuaalisten ja hybridityömallien käyttöönottoa. On osoitettu, että digitaalisiin liiketoimintoihin perustuvat yritykset voivat selviytyä ilman fyysistä toimistoa, ja tämä avaa uusia haasteita, taitoja ja mahdollisuuksia johtajille menestyä virtuaalisessa ympäristössä. E-johtajien on tärkeää käsitellä viestintää, teknologiaa, monimuotoisuutta, luottamusta ja etäisyyttä. Yksilöiden ja organisaatioiden sopeutuminen tähän uuteen todellisuuteen edellyttää e-johtajilta uusien taitojen, kuten viestinnän, luottamuksen rakentamisen, muutosjohtamisen, tietotekniikantyökalujen ja tunneälyn, omaksumista kilpailukyvyyn säilyttämiseksi nopeasti muuttuvassa ja jatkuvasti muuttuvassa virtuaalisessa ympäristössä. Siitä huolimatta yksityissektorin virtuaalijohtamisen haasteiden ja taitojen ymmärtämisessä on vähän tutkimusta Covid-19-aikana. Tieto siitä, miten johtajuus on muuttunut tai kehittynyt pandemian alusta ja etätöyöhön siirtymisestä nykyiseen "uuteen normaaliin", on myös rajallista. Aiemmat tutkimukset keskittyvät enemmän työntekijöiden kokemuksiin vain virtuaalisessa ympäristössä ja jättävät huomiotta johtajien näkökulmat.

Tämän tutkimuksen tavoitteena on selvittää johtajuuden kehitystä Covid-19-aikana keskittyen johtajien kohtaamiin haasteisiin ja kriisiaikoina virtuaalisessa ympäristössä tehokkaasti johtamiseen tarvittaviin taitoihin. Tavoitteina ovat tunnistaa menestyksekkäiden johtajien tarvitsemat taidot johtaessaan tiimejään ja tarkastella pandemian aikana virtuaalitiimejä johtavien johtajien kohtaamia haasteita sekä selvittää, miten virtuaalinen johtajuus on voinut kehittyä pandemian alusta nykypäivään.

Tutkimus oli laadullinen tutkimus, joka perustui puolistrukturoituihin haastatteluihin. Kahdeksan haastateltavaa, jotka ovat johtaneet etätiimejä pandemian aikana osallistui tutkimukseen. Aineiston analyysi perustui laadulliseen sisältö- ja teema-analyysiin. Lisäksi tutkimus oli abduktiivinen ja tutkiva luonteeltaan.

Tämän tutkimuksen tulokset viittaavat siihen, että tehokas johtaminen virtuaalisessa ympäristössä edellyttää yleistä sopeutumiskykyä ja joustavuutta viestinnässä ja johtamistyylyissä. Sitoutuminen useilla alueilla, kuten luottamuksen rakentaminen, hyvä tietotekniikan työkalujen käsittelytaito, työ- ja yksityiselämän tasapainon ylläpitäminen sekä empatian ja ymmärryksen osoittaminen, olivat muita tehokkaan johtajuuden kriittisiä tekijöitä. Lisäksi muutosjohtaminen ja tunneäly mainittiin ratkaiseviksi menestykselle virtuaalijohtamisessa. Kaiken kaikkiaan tutkimus viittaa siihen, että e-johtajuus pandemian aikana on muuttunut monimutkaisemmaksi, mikä edellyttää laajaa taitojoukkoa käsitelläkseen kaikkia mahdollisia haasteita ja sopeutuakseen nousevaan virtuaaliseen ympäristöön.

Johtajille tarkoitetut joitain seurauksia ovat avoimen viestinnän kaksinkertaistaminen ja sen asettaminen etusijalle, luottamuksen rakentaminen työntekijöihin säännöllisten tapaamisten avulla, työ- ja henkilökohtaisen elämän välisen tasapainon ylläpitäminen sekä mukautumiskyky kaikkiin nouseviin e-johtajuuden haasteisiin tai taitoihin virtuaalisessa ympäristössä.

AVAINSANAT: covid-19, pandemic, virtual leadership, e-leadership, virtual teams, technology, remote work, new normal

Contents

1	Introduction	8
1.1	Background of the study	8
1.2	Research question and objectives	11
1.3	Review of existing research	12
1.4	Research gap	13
1.5	Definitions of key concepts	14
1.6	Thesis structure	16
2	Virtual Teams	18
2.1	Definition and history of virtual work and teams	18
2.2	Definition of a virtual team	21
2.3	Comparing the virtual team model and traditional team model	22
2.4	Tools and technology used in a virtual setting	23
2.5	Advantages of virtual teams	26
3	Virtual Leadership	28
3.1	Definition of virtual leadership	28
3.2	Challenges for leading in a virtual environment	29
3.2.1	Communication	29
3.2.2	Distance and time	31
3.2.3	Trust	32
3.2.4	Diversity	33
3.2.5	Other challenges	34
3.3	Leadership skills in a virtual environment	35
3.3.1	Effective communication	36
3.3.2	Feedback	36
3.3.3	Goal direction	37
3.3.4	Conflict resolution	38
3.3.5	Role modelling and coaching	38
3.3.6	Appraisal	39
3.3.7	Focus	39
3.3.8	Awareness	39
3.3.9	Technological skills and knowledge	40

3.4	E-leadership skills in the Covid-19 era	41
3.5	The theoretical framework of the study	43
4	Research Methodology	44
4.1	Research philosophy and approach	44
4.2	Research Design	45
4.3	Research Methods	47
4.3.1	Sampling	47
4.3.2	Data collection	48
4.3.3	Data analysis	49
4.3.4	Reliability and validity	51
5	Findings	52
5.1	Virtual teams and e-leadership pre- and post-Covid-19	52
5.1.1	Remote work experience	53
5.1.2	The technology used in virtual leadership	54
5.2	E-leadership challenges in a virtual environment	55
5.2.1	Communication	55
5.2.2	Distance and time	57
5.2.3	Trust	58
5.2.4	Diversity	60
5.2.5	Other notable challenges	61
5.3	E-leadership skills for effective leadership in a virtual environment	62
5.3.1	Communication	62
5.3.2	Technology and technical skills	64
5.3.3	Change management	66
5.3.4	Trust building	67
5.3.5	Other notable skills	69
6	Conclusion	70
6.1	Summary of the main findings of the study	70
6.2	Theoretical contributions of the study	75
6.3	Managerial implications of the study	75
6.4	Limitations of the study	76
6.5	Suggestions for future research	77

References	78
Appendices	92
Appendix 1. Interview questions	92

Figures

Figure 1. Thesis Structure	17
Figure 2. The emergency-learning-institutionalization-new normal (ELIN) framework for discussing the impact of COVID-19 on service delivery (Raghavan et al. 2021)	19

Tables

Table 1. Other main disadvantages associated with virtual teams (Ale et al., 2009)	34
Table 2. Interviewee information	48

1 Introduction

1.1 Background of the study

Working life is rapidly changing due to the current state of the world. The Covid-19 situation has changed the narrative faster than it would have organically and has challenged the traditional way of working (Contreras et al., 2020). After the Covid-19 outbreak, social distancing was adopted worldwide as a reliable prevention method for spreading infection (Prin and Bartels, 2020) which in turn obligated working remotely. In the remote working context, information and communication technologies (ICTs) give employees the opportunity to work everywhere with an internet connection at any time (Müller and Niessen, 2019). Working remotely was forthcoming due to the technological revolution; however, the pandemic made it urgent. The speculation today shows that the norm of remote work will also continue after the pandemic, which will disrupt traditional organizational structures and force companies to embrace change (Contreras et al., 2020). Now, there are clear signs that companies are considering hybrid working models, which means working partly at home and in the office. This approach is, however, highly dependent on resources, risk, and aims of the company (Raghavan et al. 2021).

The popularity of working remotely shows that digital-based businesses can survive and be as effective without office space, thanks to the extensive technological tools that we have today. Recently, Twitter and Square CEO Jack Dorsey announced that his employees would have the ability to continue working from home forever (Kelly, 2022). Shortly after, Shopify announced the same thing, and now Facebook has joined the trend (Danial, 2020; Liu, 2021). A virtual working environment does have its benefits, and it has been proven for several years that it is possible to run a company solely over the internet. Platform and software companies are at the forefront of this trend, but many other industries are following.

Traditional face-to-face office and workplace structures are changing to a hybrid or a permanent work-from-home strategy. (Alexander et al., 2021) Furthermore, questions related to business travel are being discussed and rethought in most boardrooms today as to whether it is beneficial to travel as extensively as in pre-pandemic times (Caputo et al., 2021). Even the need for office space is being reconsidered, especially in dense cities such as San Francisco and New York, where the rents are high (Eavis & Haag, 2021). The utilisation of technology allows us to connect from anywhere in the world. Nevertheless, it leads to the question of what happens when more companies, organisations, and even schools are partly or wholly moving over to digital; what are the challenges for employees, leaders, and teachers?

When societal structures are undergoing rapid changes, challenges arise. A virtual working environment brings up new issues we have not faced before. The primary need for the study is to understand what issues and opportunities a rapid transition of managing virtual teams has had on leaders and managers. Factors such as productivity, effectiveness, interaction, technology, time zones, and mental and physical health are all included as challenges. (Liu et al., 2021; Morrison-Smith & Ruiz 2020)

The importance of this topic can be seen in the continuous growth and embracement of virtual work. Since the birth of the internet, companies have begun implementing virtual projects and workforce step-by-step. During the last three years, one could say that it has become "the new norm" (Kosteas et al., 2022). With the significant increase in online work, difficulties could affect the company and its workforce. Leaders and managers must consider whether their people can continue to work from home or whether a hybrid or office-only model is to consider down the line. The challenges and difficulties between employers and employees could be seen in trust-building, feedback, and communication. (Contreras, et al. 2020)

Companies must rethink traditional structures, innovate, and embrace technology to stay ahead of their competition. Similar comparisons can be made to the era of e-

commerce. Those who were early to embrace the benefits of e-commerce stores are thriving today, whereas companies that ignored the spike in online commerce have had significant troubles, such as Toys R' Us. (Basiouny, 2018)

Although there has been extensive research on virtual teams and virtual leadership for over 20 years, the most recent global pandemic has brought further importance to the research area. The challenges present before are time zone differences, lack of face-to-face interactions, trust, and the context of communication. The rapid change has made virtual teams more popular during the last three years and brought up new challenges that have not been present earlier. As mentioned, virtual leadership has always had its challenge; however, the pandemic has increased uncertainty and stress within the virtual environment, causing it to be even more difficult. (Zeuge, 2020; Gazor ,2012)

Regardless of the challenges, virtual teams have advantages compared to a traditional office setting, such as flexibility, a broader pool of talent, and general cost savings. (Bergiel et al., 2008) The already existing advantages of virtual teams have increased the popularity of virtual teams, which has led to further importance on how virtual leaders can lead effectively. Effective virtual leadership may result in higher performance, motivation, and job satisfaction. In this manner, it highlights the importance of what challenges virtual leaders may face and what skills are needed to lead effectively during times of crisis. (Kohntopp & McCann, 2019).

Furthermore, specific skills have been identified for effective virtual leadership. Professional knowledge of various ICT tools and knowing how to use them is fundamental (Van Wart et al., 2019). Torre and Sarti (2020) stated that social, communication, trust-building skills, and change management were necessary for effective virtual leadership. Another emerging theme within virtual leadership is knowledge management, which refers to how organizations share, organize, and analyse knowledge with employees (Liu et al., 2020). In addition, other skills necessary that were identified are goal direction (Hunsaker and Hunsaker, 2008), feedback (Geister et al.

(2006), conflict resolution (Shin, 2005), appraisal (Griffith et al. 2003), and awareness (Kurt, 2012)

In conclusion, the Covid-19 pandemic has accelerated a significant shift in how companies and organizations conduct business because virtual teams have increased demand. To lead effectively in a virtual environment is central to success, and the leadership demand for various virtual leadership is more critical than ever before.

1.2 Research question and objectives

As companies further embrace the benefits and potential of working from home, many will face disputes and challenges. The traditional way of working in an office has been relevant for the last decades, and the management structure has been built upon it for a long time. The new norm of online work affects almost every firm stakeholder, resulting in a corporate reassessment of factors such as processes and teamwork.

This research paper aims to understand leaders' challenges and leadership skills during crises. The purpose is also to help understand how virtual leadership may have evolved during the Covid-19 crisis. The Research Question for this work is: "How has leadership evolved during the Covid-19 pandemic?"

For a successful thesis, research objectives must be set to help the writer in the right direction and show what the research is trying to achieve. The following objectives have been set for the study:

1. Identify challenges for leaders leading virtual teams during the Covid-19 pandemic.
2. Understand what skills successful leaders require in leading their teams during the pandemic.

3. Understand how virtual leadership may have changed from the start of the pandemic until now.

1.3 Review of existing research

There has been a significant increase in research and literature on virtual leadership during the Covid crisis. A more thorough analysis shows that the leadership material is highly focused on the healthcare industry and the public sector. The healthcare and public sectors were industries that received significant setbacks in capacity and overall change when the pandemic started (Nicola et al., 2020). It is also evident that much of the literature focuses on the health and well-being of first responders and the role that leaders play. Studies have shown that first responders, such as healthcare workers and emergency personnel, have been under immense stress and pressure during the pandemic and that leaders must play a critical role in supporting their mental and emotional well-being (Haque, 2021; Petzold, 2020). The literature also highlights challenges in online education and how academic leaders have experienced teaching in an online-only environment (Pandit, D., & Agrawal, S., 2022). Furthermore, general competencies required for virtual leadership in schools have been a more recent focus within the academic literature (Azukas, 2022).

In addition to virtual leadership within the public sector, research is also being done in the private sector. The research addresses the topic from various angles and often bases the theory on pre-pandemic data. Contreras et al. (2020) discuss the subject from a general teleworking perspective during the emergence of Covid-19. Both opportunities and risks of teleworking are being discussed based on data mostly between 2017 – 2019. In addition, Management, Leadership and Telework Environments, as well as e-leadership, are being analysed. Contreras et al. (2020) argued that *“The pandemic has increased the need to augment our knowledge on how to lead effectively and build highly functional virtual teams”* as there is limited knowledge of e-leadership theory.

Chamakiotis et al. (2021) discussed in their article “Reimagining e-leadership for reconfigured virtual teams due to Covid-19” how physically assembled leaders had to transition into virtual leaders how Covid-19 has created a ‘new normal’ that will create new ways of working. In addition, the literature reviewed in the pre-Covid-19 context is highly focused and dominated by the concept of Global virtual teams.

In contrast, local virtual teams are predicted to surge in popularity during the Covid-19 era. Several authors have addressed the differences between the two concepts, and more recent publications highlight the general characteristics of local virtual teams (Boland et al., 2020; Chamakiotis, 2020). For the Covid-19 context, local virtual teams consist of the same people who were working together in a physical office space which would characterize them as limited in diversity for culture, language, organisation, and time zone (Ancona et al., 2020)

1.4 Research gap

Previous research shows that virtual teams have been actively researched for the past 20 years. It highlights various themes of changes in platforms and necessary leadership fundamentals for leading effectively. Challenges and success factors are also highly researched, focusing on key categories such as performance, trust, effectiveness, and cross-cultural teams. More recent research since the Covid-19 pandemic in 2020 shows that most of the literature is focused on the healthcare industry and the public sector. The current literature for the private sector still leaves a research gap in emerging challenges and skills for virtual teams and leaders during the pandemic. There is also limited data on how leadership has evolved and potentially changed during this period now that we are slowly transitioning to a ‘new normal’.

Prior studies show that virtual leadership challenges and skills needed in times of crisis in the private sector are still an underexplored area. The evolution of virtual leadership is constantly changing, bringing new challenges, opportunities, and skills requirements. Three years into the pandemic that is still ongoing, the virtual leadership challenges and

skills may have evolved during the pandemic ever since the rapid shift to remote work. The virtual leadership aspect during Covid-19 and its related literature is also mainly focused on the individual employee and their engagement in an online-only environment while leaving a gap for the leader's perspective (Chanana & Sangeeta., 2021). Kerber and Buono (2004) determined various challenges that virtual leaders face due to their unique attributes. Chamakiotis et al. (2021) argue whether these challenges are still relevant and if they are the only challenges virtual leaders face whilst recently transitioning to working from a place that has not commonly been associated with work. Chamakiotis et al., (2021) discussed various themes of virtual leadership during Covid-19 and guidance for future research. The first theme highlights virtual leadership for well-being that questions how various leadership practices can be implemented to avoid 'technostress' and burnout.

Another theme within the research highlighted virtual leadership for trust development, relationship building, and engagement. Although pre-Covid-19 research has broadly covered these topics in the context of virtual teams and leadership, the suggested future research highlighted challenges within the virtual environment related to responsibility, respect, and harmony. Work-life boundaries is another theme that is underexplored within the Covid-19 context. Virtual leaders must ensure they continue to have high-performing teams in a work-life setting where work and leisure are blurred out. The ultimate challenge and opportunity for the virtual leader are to find practices that ensure their employee's balance at work and home. (Chamakiotis et al., 2021)

In conclusion, Covid has drastically changed the working environment within a limited timeframe. The new working standard has left a gap in virtual leadership and how it is best conducted during a crisis.

1.5 Definitions of key concepts

There are several critical definitions mentioned throughout the thesis. This sub-chapter helps the reader understand and familiarise themselves with words and concepts to further

increase awareness of virtual leadership. Some key definitions are covered more in-depth throughout the study.

e-Leadership

The most commonly accepted explanation for e-leadership is “a social influence process embedded in both proximal and distal contexts mediated by AIT (Advanced Information Technologies) that can produce a change in attitudes, feelings, thinking, behaviour, and performance” (Avolio et al., 2014). In more concrete terms, e-leadership refers to leadership conducted through electronic mediums and channels. An e-leader is someone leading within the boundaries of AIT.

Virtual Leadership

Several academics similarly explain virtual leadership as e-leadership. Hertel et al. (2005) elaborated in more detail that virtual leadership manages distributed work where the team members predominantly work through electronic channels. A virtual team is a team operating within the setting of virtual leadership. The concept of a virtual team is covered more in-depth in Chapter 2.

Virtual Environment

A virtual environment can be seen as any but solely electronic-based. Schroeder (1996) explained the term as “a computer-generated display that allows or compels the user (or users) to have a sense of being present in an environment other than the one they are actually in, and to interact with that environment”. Blascovich (2002) simply stated that it is a “networked common operating space”. In this space, users can interact with technology-based products. Virtual environments include chat rooms, email, streaming platforms, and group voice- or video calls.

1.6 Thesis structure

There will be five major sections in this thesis. The first part will introduce the reader to the topic with reasonings why the study was conducted. The first part also discusses the research gap and scope of the thesis.

The theoretical part of the thesis will be divided into three main sections. The parts of the theoretical approach have been divided so that the reader can familiarise themselves with the work from a historical perspective, an introduction outlook, and a more strategic perspective of virtual team leadership.

The first section will cover the historical aspects of virtual work. Including a short history of virtual/online work and how it has evolved. In addition, how companies have embraced and adapted to the virtual environment and what has been learned over the years.

The second section will focus on virtual teams in general, such as the definition of virtual teams, what kind of virtual team models exist, and how they compare to traditional management models. In addition, the second part covers how the work is being conducted and where (i.e., platforms, technology). Finally, skills and requirements of both managers and employees, as well as advantages versus disadvantages

The theory's third chapter will focus on virtual team leadership. This section will cover factors such as leading in a virtual team environment (communication, best practices, requirements), success factors, and differences between face-to-face and virtual leadership. In addition, the challenges and opportunities of a leader in a virtual team environment have been covered (time zones, trust, productivity, effectiveness), as what productive and effective leadership is in a virtual environment.

Chapter four discusses the research methods, including data collection, sample, and the data analysis approach of the material. The fourth chapter examines interview findings in connection with the theoretical framework. The fifth and final part discusses the

conclusions of the thesis, including the main findings, managerial implications, limitations, theoretical contributions, and suggestions for further research.

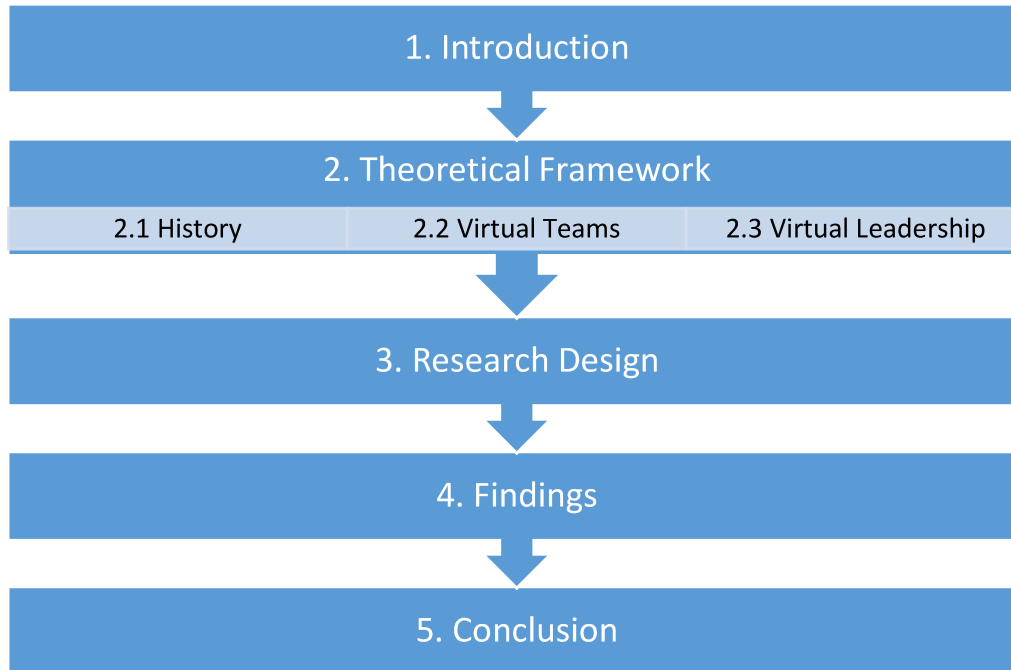


Figure 1. Thesis Structure

2 Virtual Teams

2.1 Definition and history of virtual work and teams

To fully understand the concept of virtual teamwork and leadership, significant historical milestones can help us comprehend how our current digital ecosystem has become what it is today. In 1975, the first personal computers (PCs) were introduced. The breakthrough of PCs began the transfer of traditional office tasks to be implemented and powered by technology (Andauer, 2023). Four years after, in 1979, five employees from IBM were allowed to work from home as a corporate experiment. By 1983, over 2000 IBM employees were working remotely. Another significant advancement in innovation took place in 1983 when the internet was born. The internet reached a global user base of 4.66 billion people in 2020 (Kemp, 2021). In the Mid-1980s, J. C. Penney allowed their employees working in call centres to work from home, further strengthening virtual work. The wireless network protocol “Wi-Fi” was introduced and released to consumers in 1997, allowing technological devices to connect to the internet without a cable (Thomas, 2022).

The beginning of the 2000s marked a new era of virtual work with a rapid increase in globalization and communication technologies (Kirkman et al., 2002). According to Walvoord et al. (2008) and Cascio (2000), virtual team structures began to increase and generate popularity within the organization during the 2000s. The DOT Appropriations Act was executed in 2000, which required executive agencies to set up policies for telecommuting (remote work) without receded performance. Analysing the critical indicators provided by the U.S. Census for the period between 2000 – 2010, it is evident that working from home rose significantly. Workers who worked at least one day per week increased by over 35% (4 million), and infrequent remote workers increased from 9.2M to 13.4M. (US Census Bureau, 2013)

The decade of 2010 began with Barack Obama signing the Telework Enhancement Act of 2010. The Act required federal executive agencies to establish and authorize remote

work policies. (Telework enhancement act, 2010). The Act signed by Obama can be seen as a symbolic milestone demonstrating that remote work virtual work is here to stay, not only in the US but also globally. Companies such as WeWork, Zoom, and Slack emerged and were founded to support productivity and virtual work during the same era. According to Gartner & Gartner (2020), the 2010s also increased the Software-as-a-Service (SaaS) growth from \$10B in 2010 to over \$100B in 2020. According to Dishman (2019), a survey by Freelancers Union and Upwork stated that the generation born between 1981 and 1996 is currently the largest workforce in America. The age segment between 18 to 34-year-olds is freelancing, with an increase of 38 per cent since 2014.

The year 2020 marked a rapid shift within the virtual environment. The Covid-19 pandemic forced many to work from home full-time with extremely short notice. A recent Remote Work Survey conducted by PwC US highlighted several critical insights into the virtual work environment during 2020. The office's role has changed, productivity has increased, and hybrid models are gaining popularity. Furthermore, new questions, solutions, and concerns will arise with the increased popularity of remote work. (PricewaterhouseCoopers, 2021). As of today, we are currently navigating our way through a “new normal” after the Covid-19 pandemic, which has disrupted and changed the way we do work and live. Raghavan, A. et al. (2021) discussed in their article “*COVID-19 and the New Normal of Organizations and Employees*” how we have transitioned through various phases during the pandemic to a “new normal”. Based on the evolvment, a new framework called the emergency-learning-institutionalization-new normal (ELIN) was introduced. The framework highlights the pandemic as an emergency that heightens the response of workers and organizations to a new era or level. More specifically, in this context, post-Covid-19 is the “new normal”, seen in Figure 2.



Figure 2. The emergency-learning-institutionalization-new normal (ELIN) framework for discussing the impact of COVID-19 on service delivery (Raghavan et al. 2021)

The new normal in a Covid-19 context refers to alterations in the behaviour and operations of organizations and their employees during the pandemic. This concept may be seen as a transition period implemented at various scales, paces, and intensities across sectors and organizations. The new normal has also allowed an organization to embrace innovation at different levels. As cross-sectoral adoption is increasing for telework, it is set to create fundamental change in the long term for organizations. Organisations in a new normal may adapt to hybrid working models that mix working remotely and at the office. Organizations taking the hybrid approach may depend on available resources, risks, and the conclusive outcomes they aim to achieve. (Raghavan et al., 2021)

Pre-Covid-19, the adoption of digitalization was supported but poorly managed across all countries, organizations, and sectors (Niraula & Kautish, 2019; Al-Mamary et al., 2015). For employees, adopting digitalization was challenging due to mental pressures and privacy concerns. In addition, social influence, expectations of high performance, trust, and individual innovativeness were stated as crucial factors that influenced the adoption of digitalization (Yassaee & Mettler, (2019), Berger & Hertzum (2014) Nwaiwu et al., (2020), Sari et al., (2019).

During Covid-19, the relevance of digital adoption increased, and the organizational environment became favourable for pushing the adoption on all economic levels across countries. On a meso-level, decisions were made to increase widespread digital adoption, making it mandatory for micro-level employees. Employees with previous knowledge of digital applications could transition to the new standard of work quickly and efficiently. In contrast, others found it challenging in terms of being prepared and fast-paced adoption. (Smit, 2020; Kim et al., 2021) During the pandemic, there has been a significant improvement in understanding digital technologies (Nagel, 2020). In the “new normal”, employees are significantly more accepting of advanced technologies like artificial intelligence (AI) (Jensen, 2020). Organizations for their employees are also expected to increase digital skill development prioritization. (Horii & Sakurai, 2020)

Finally, Raghavan et al. (2021) discussed various meso- and micro-level trends that will seemingly continue during the “new normal” period. For telework, there will be a positive change in employee well-being as a policy, telework policies, decreased resistance to telework, as well as further adoption of hybrid working models. An unfavourable change for telework can be seen in social isolation. Furthermore, for digital adoption, positive changes can be seen for a further expedition of digital transformation, positive acceptance of digital solutions, and support of adoption by managers. Negative changes can be seen in the rise of cyber threats as more people interact digitally, the digital divide increases, and an urgent need for digital skill development.

2.2 Definition of a virtual team

Existing research shows a lack of clearly defining a ‘virtual team’. Definitions for the concept vary from researchers and to which concept the virtual team applies. Chudoba et al. (2005) stated the precariousness in defining what “virtual” means in numerous corporate contexts and settings. A “team” can be described as a group of people who aim to commit to a standard working approach, goals, and purpose, and they hold themselves responsible (Zenun et al., 2007). According to Anderson et al. (2007), a “virtual team” covers various activities and work arrangements powered by modern technology.

A common nominator for virtual teams, stated by several researchers, is the aspect of time and location. Peter and Manz (2007) elaborated that a virtual team is geographically dispersed to coordinate their work. Hertel et al. (2005) declared similarly that virtual teams are allocated geographically and correspond their work with communication technologies. The perspective that Leenders et al. (2003) gave on virtual teams was the collaboration in the execution of a task or project while being geographically separated. Furthermore, Lurey’s (2001) virtual team definition includes people working together distributed across space, time, and organizational barriers. The *Australian Journal of Basic and Applied Sciences* stated that Powell et al.’s (2004) statement of virtual teams was the most accepted one” We define virtual teams as groups of geographically,

organizationally and time dispersed workers brought together by information technologies to accomplish one or more organization tasks.” To further understand the concept of a virtual team, Bal and Teo (2001) have listed four standard criteria that a virtual team has to meet to classify as ‘virtual’. These are but are not limited to being geographically distributed (different time zones), having a Common Purpose, being Empowered by modern communication technologies and tools, and Involvement in cross-functional collaboration. In conclusion, the definition by Powell et al. (2004) is used throughout this study as the main definition of a virtual team.

2.3 Comparing the virtual team model and traditional team model

Comparing Virtual Teams and Traditional Teams makes it possible to identify significant differences between them. As earlier mentioned, virtual teams operate throughout time, space, and organizational boundaries supported by modern technology, unlike traditional (on-site, physical) teams. According to Kratzer et al. (2005), participants in traditional team models work together and in virtual teams in various locations. Further, traditional team models rely on precise coordination, where the team performs the tasks together. In entirely virtual teams, the tasks must be remarkably structured. The most notable difference is the virtual teams’ reliance on technology that allows ‘computer-mediated’ communication and interaction as opposed to traditional teams that communicate face-to-face in co-location (Munkvold and Zigurs, 2007).

To further help distinguish virtual teams and traditional teams, Pawar and Sharifi's (1997) study of the virtual and traditional team models’ classification helps clarify significant differences in their nature. They identified five major differences.

First, *the nature of the interaction* is maximized with an excellent opportunity to share work and non-work-related information with physical teams. Within virtual teams, the casual information is both limited and minimal. Second, *resource utilization* is frictionless for physical teams, whereas virtual team members must access similar technological and non-technological infrastructure remotely. Third, *the working environment* for virtual teams is different to a traditional team by remotely accessing the work projects from,

e.g., home. Issues such as difficulties in sharing ideas or dilemmas with other members of the team were apparent in Pawar and Sharifi's (1997) study. As for the physical teams, limitations were identified for accessing data and interacting with those working virtually. Fourth, *cultural and educational background* differs depending on the team setting. It is common for those in conventional teams to have similar educational and cultural backgrounds.

In comparison, virtual teams are much more likely to vary in culture, education, time orientation, skill level (or expertise), and language. Fifth, *technological compatibility* can create an imbalance between physical and virtual teams. Difficulties with technology are minimized when a physical team is working with a single organization on-site. The technology tools are familiar, and workers can share their expertise within the group. As for virtual teams, various and often unknown technology tools are being introduced and implemented. Setbacks are highly likely if introductions and tool negotiations are not discussed initially.

Lastly, based on former research by Schmidt et al. (2001), virtual teams communicating mainly with technology-based communication tools are more impersonal, professional, and business oriented but less friendly in a face-to-face environment than in a virtual setting.

2.4 Tools and technology used in a virtual setting

For a virtual team to function fully, technology is a crucial factor for its success. Platforms, tools, software, and hardware are all essential aspects of the ecosystem of a virtual team. Walvoord et al. (2008) stated that virtual teams face significant communication challenges. Therefore, the right equipment and computer/mobile device software can significantly impact communication effectiveness and overall work performance.

Current technology services have broad functionality and cross-functional features. As an example, MSN Messenger used to be an instant message-only platform. However,

today, WhatsApp offers instant messaging, video calls, voice messages, and encrypted file sharing on mobile and desktop. The app is currently used by over 2 billion people in over 180 countries (About WhatsApp, 2023). Singh et al. (2022) discussed that Zoom and Microsoft Teams have become popular during COVID-19. A benefit of these tools has been the freedom for employees to join at their convenience without having to receive a call.

In comparison, Zoom and Microsoft Teams users get greater liberty of participating and leaving calls, whereas Skype does not offer this option. In addition to Microsoft Teams and Zoom, Slack and FaceTime were mentioned as popular platforms during COVID-19. In addition, Google Meet hit 100 million Google Play Store installs in April 2020, whereas Skype usage increased by 70% in March 2020 (Reuters 2020; Wang, 2020). Ilag (2021) stated that most communication comes from visual cues, making remote team meetings more common. To increase the accessibility even further, Microsoft Teams have allowed 20 people to join in a video call at the same time with over 100 participants. Ilag (2021) also concluded that to make it possible to enjoy the benefits of remote work without any significant challenges, it is vital to find communication and collaboration tools like Microsoft Teams to bridge any gaps between the physical and virtual environment. Another popular category is online collaboration tools, which also saw a spike in usage during Covid-19.

The trend for modern Software as a Service (SaaS) platforms aim to provide users as much value as possible, making it a one-stop for all platforms. It is a way for technology corporations to provide their services in a multi-functional ecosystem to avoid having users use a different app or program for each of their tasks. Asana is an example of such software, offering project management tools, task prioritization, team collaboration, and general progress tracking. The pandemic fuelled the growth of similar platforms, and Asana had a 70% increase yearly, topping \$100M quarterly in revenue (Asana, 2021).

Now that there are several software's in each category, what determines what type of software the leader is choosing? Sivunen, A. & Valo, M. (2006) article "Team Leader's Technology Choice in Virtual Teams" introduced and pointed out several factors of leaders choosing the right communication technology for their virtual teams' infrastructure. The results and findings indicated that the choice was grounded in four main factors. The first two factors are **person-related**, Accessibility and Social Distance. In this context, accessibility refers to the users' comfort, level of friction for the channel, and social distance; the choice is grounded in the distance of the members. The other two factors are task-based: idea sharing and informing. These factors describe the selection based on the type of work.

The main findings for Accessibility show that team leaders choose various forms of technology communication based on what is available to them and team distribution. For example, Team #1 and #2 used a fixed phone most of the time, whereas Teams #3 and #4 barely used it. Instead of Team #3 using the phone, they utilized an instant messaging platform due to its speed and informativeness. The most accessible form of the channel was the mobile phone that Team #1 and #3 actively used for communicating with their team.

Social Distance was a critical factor related to socio-emotional issues. The team leaders stated that face-to-face communication was recommended instead of a phone call for personal feedback and team support. However, difficulties arose due to geographical distances. Even if the telephone did not seem supportive enough, another team leader stated that email worked well for checking up on virtual team members. The team leaders also pointed out that email was a suitable medium for discussing negative issues as it allowed both the sender and receiver to express themselves better and give time to do so. Another team member preferred email instead of face-to-face due to its asynchronous nature.

Idea Sharing was mainly utilized within videoconferencing and conference calls. Team #2 had weekly conference meetings, but in one example, the meeting was cancelled due to an upcoming face-to-face meeting instead. Team #3 also utilized conference calls but were not as thorough due to upcoming face-to-face meetings. The team members of Team #4 elaborated in a discussion forum that they would prefer face-to-face meetings instead of discussion forums and videoconferencing tools. The need for a face-to-face meeting emerged from the team members since their desire to share ideas and gain general learning outcomes was best conducted in the same room. Especially for idea planning and learning from other members, videoconferences and discussion forums were not considered practical tools. A common nominator for Informing was that all the leaders of the teams pointed out that email was the most vital tool for task-related activities at work. The simplicity in attaching documents and giving general guidelines and instructions was most effectively done over email.

The digital landscape is developing fast, with new tools and technologies introduced every week. What is new today can be old tomorrow. Sivunen & Valo (2006) findings show that tools, mediums, and methods depend highly on the leader and task. Some prefer face-to-face meetings to solve complex issues, whereas others might want to take on sensitive matters over email. With the ongoing digital transformation and work-from-home culture, the mediums and channels matter more than ever.

2.5 Advantages of virtual teams

There are several advantages associated with virtual teams. Due to the constant technological advancements, virtual teams are getting more popular. Okot (2021) stated that companies that adopted the remote working model reduced their costs in maintenance and office space, which allowed them to invest and diversify. Due to virtual work being conducted from home or in a geographic location nearby, travel time and cost are reduced to a great extent. Any expenses related to travel, such as accommodation, food, and transport, can almost be eliminated due to online

communication. Baskerville and Nandhakumar (2007) stated that IBM estimated to save over \$50 million due to utilizing virtual teams instead of on-site visits.

Kier (2020) discussed that corporate talent acquisition is highly benefiting from virtual teams. Due to non-geographical barriers, organizations can hire top talent within the field without searching for talent locally. Virtual teams make it possible to hire the perfect professional candidate settled at his/her current location. In addition to companies being able to hire top talent globally, it may help them create a more inclusive and diverse workforce.

Several studies have shown that virtual teams are more efficient and flexible in several circumstances. In a case study of virtual team working in the European automotive industry by May et al. (2001), it was found that virtual teaming had an overall higher effectiveness and efficiency, but the satisfaction level was lower. Jarvenpaa et al. (1994) found that virtual teams allow organizations to increase flexibility and responsiveness. Anthony et al. (1998) stated that workers might get more flexibility by working from home since their schedules might allow for fewer work-related boundaries and avoid wasting time commuting.

Furthermore, virtual teams are proven to be more diverse and assorted, which can result in more robust and more effective structures than traditional teams altered by time and place. Virtual teams foster creativity, originality, and innovation due to the high-level team diversity. In addition, a virtual work environment engenders equal opportunity in the workplace. The ease of access results and helps companies to accommodate both needs and wants of some disadvantaged employees. Working online constitutes a culture promoting fairness and equality among workers. It discourages race and age discrimination as performance management is primarily grounded in productivity and results averse to other aspects. (Morrison-Smith & Ruiz, 2020)

3 Virtual Leadership

3.1 Definition of virtual leadership

Virtual leadership, or “e-leadership”, as many scholars refer to it, has become an essential part of managers’ daily work. Companies expanding geographically with the help of new communication channels have surged the popularity for leading through various digital channels (Darics, 2020). The concept of “e-leadership” refers to leaders conducting most operations through different digital outlets and channels (Zaccaro and Bader, 2003). An updated definition by Avolio et al. (2014) referred to the concept as “*e-leadership is defined as a social influence process embedded in both proximal and distal contexts mediated by Advanced Information Technologies (AITs) that can produce a change in attitudes, feelings, thinking, behavior, and performance*”. Based on the description above, the authors emphasize that technologies operate at two levels, which are proximal and distal. The proximal refers to context nearest to the leader and follower, whereas the distal cover the organizational culture and environment. Liu et al. (2020) discuss the evolution of the e-leadership concept. A narrow definition as starting point was provided where e-leadership referred to ICTs only, covering the mix of electronic and traditional communication methods. The broader definition includes both ICTs and AITs, which is not limited to communication only; instead, support for decision-making, knowledge management, and organizational processes was also included in the broader definition. Furthermore, the grand definition also includes a continuous interplay and exchange between leadership and technology. Van Wart et al. (2019) have proposed a more concrete definition of e-leadership, emphasising that leaders must mix innovative and traditional tools and styles depending on the situation. Also, it is the leader’s responsibility to adopt various technologies for oneself and the organization, as well as know how to use such ICTs.

3.2 Challenges for leading in a virtual environment

Global virtual teams face similar issues and challenges to traditional teams, but certain aspects may only be unique to virtual teams. Computer-Mediated Communications Systems (CMCS) like e-mail, group support systems, internet, intranets, and video conferencing link virtual team members across corporate boundaries, space, and time. It is a new way of conducting business that brings up various disadvantages, advantages, problems, opportunities, and interactional dynamics (Hiltz et al., 1985). Although these technological inventions are efficient and help connect the business marketplace from new angles, inevitable adversities arise that are commonly not found in traditional face-to-face teams.

Overseeing work and general control are factors that managers have to face when leading in a virtual environment. According to Beranek and Martz (2005), communication, interactions, and overcoming selfish interests are even more crucial for successful virtual leadership. Cascio (2000) identified the loss of face-to-face synergy, lack of physical interaction, concerns with reliability and predictability, and lack of social interactions. Furthermore, Jarvenpaa (1998) stated that different time zones might negatively impact those working in a virtual environment.

Some already identified challenges in the Covid-19-era that traditional leaders transitioning to virtual leaders have been addressed by McKinsey and Deloitte in their industry reports. These are but are not limited to employees working from their home's well-being, managing work-life boundaries, and difficulties promoting new leadership styles (Comella-Dorda et al., 2020, Deloitte, 2020).

3.2.1 Communication

Communication is a significant factor that is different between face-to-face and online. Depending on the richness and advancement of the software and tools, facial expressions, gestures, and voice inflexions might be lost to some extent due to a lack of

physical presence. (Kiesler et al. 1992); (Warkentin et al. 1997) Social and contextual (e.g., social status, level of expertise) information can also be either distorted or lost in a virtual-only environment due to the anonymous nature of online interaction (Dubrovsky et al. 1991). Kayworth & Leidner (2002) similarly stated that the social and context of information could be lost due to high levels of anonymity via electronic channels. Relational links might suffer in upholding and developing connections between other members in the virtual environment. The implications can be negatively related to morale, quality of decision-making, creativity, and process management (Walther et al. 1992). In addition, due to potentially missing social context, developing trust can have setbacks (Jarvenpaa et al. 1998). Several academics have stated that trust is a significant challenge that virtual teams face (Malhotra et al., 2007, Bal and Teo, 2001, Paul et al., 2016). Furthermore, CMCS-based group work enables a broad alternative to online communication. Several findings suggest that processing communication traffic does have significant problems (Hightower et al. 1995); (Hightower et al. 1996); (McGrath et al. 1994); (Warkentin et al. 1997). Within the context of communication in an asynchronous environment, virtual team members might experience information overload with several communication channels (Hiltz et al. 1985). Therefore, the workers might have difficulties in identifying how information and directives are fitting in the overall context of group communication. Furthermore, the workers in asynchronous settings send longer and more detailed emails, which could increase the burden of processing information (Hiltz et al. 1990). The communication challenges could intensify by misinterpretations or distortions in virtual teams with a broad diversity of national, ethnic, and organizational backgrounds. Even if a multicultural team nature can provide great value, the potential disadvantage is additional challenges within communication (Solomon, 1995). Virtual leaders may face additional communication challenges as cross-cultural leadership requires high-level trust-building, sensitivity, and the skill to uphold good relationships (Uber Crosse, 2002).

Purvanova & Bono (2009) stated various reasons why face-to-face communication has an advantage in several different contexts. Nonverbal communication (e.g., visual) and para verbal (e.g., auditory) are abundant. Information loss is minimized due to a

reduction in information channels. The feeling of social presence and involvement in conversations are increased. Allows transmission of social context and standing. Less cognitively and physically demanding than other communication channels.

Technology dependency may result in a challenging factor for several organizations. It requires investments in both hardware and software and the employee's know-how. Friction and conflict may arise for the difference in individuals' abilities to learn new technologies. Some are digital natives where technology-related learning comes easily, while others may experience technophobia (Townsend et al. 1998). The imbalance could result in significant challenges for operating smoothly in a virtual environment.

The discussion above highlights several communication-based challenges that virtual team leaders face. The reliance and dependence on electronic communication channels and information technology can increase complications like diffusion of information, knowledge management, and misunderstandings. Due to non-physical contact, the virtual leaders must develop their skillset in communication for increasing the team's feeling of inclusiveness and belongingness based on virtual socializing activities. A predominant challenge for virtual leaders is their capability for continuous inspiration and motivation for the team, which may increase trust and cohesion for better overall performance (Lilian, 2014).

3.2.2 Distance and time

Distance and time are vital challenges for virtual team leaders managing their members globally. The dispersion of the team is highly reducing the degree of social support, which is common in traditional teams on-site. A common challenge for the virtual team leader is to quickly address and respond to members' requests to increase the sense of social belonging (Zaccaro & Bader, 2003). The physical closeness missing for those operating virtually must be compensated by fundamentally assembled teams that use the information and communication-based technology that will both support and motivate the members.

Cummings (2011) addresses the issue that may impose coordination burdens for the virtual team members and especially virtual team leaders, such as deficiency of geographic distance and lack of work hours that overlap. It can lead to virtual team leaders facing significant challenges in coordinating tasks within the group. Deadlines for tasks and projects are proven to increase challenges and adversity for the team leaders due to stressors exposed by the reliance on electronic communication. Therefore, Lilian (2014) states that it is vital for virtual team leaders to consider time as a crucial factor in delivering projects on time.

The proposition given by the author for virtual team leaders contributing to successful teams are to address operational, physical, and cultural distance needs rapidly to create a sense of belonging while utilizing a diverse range of electronic communication technology.

3.2.3 Trust

Trust is an extensively researched phenomenon within the virtual leadership setting (Jarvenpaa et al., 1998). According to Uber Crosse (2002), mutual trust is a vital factor in prosperous alliances internationally and critical for virtual teams due to the incomplete knowledge of all team members (Child, 2001). Trust, according to Cascio and Shurygailo (2003), is considered more important in a virtual environment than in a traditional on-site team setting. The importance lies in expectations by the team members and constantly delivering the promised outcomes.

Several empirical analyses found that the teams with top-level trust emerged from interacting with social messages and clarity in roles for every team member. They showed a positive attitude and eagerness, intense activity direction, and enthusiasm in all their messages. Furthermore, results show that team member integration through positive dynamics through teamwork increases trust within the team. Members that are taught effective ways to create synergy within operational procedures and interactions tend to assist the progress of trust within the team (Zaccaro & Bader, 2003). Based on these insights, trust is related to the union and motivation of the team within a virtual

team setting. Raisinghani et al. (2010) pointed out that trust is substantially authorized and provided through communication.

Trust increases the motivational factor within the virtual team, and the participants will work hard and with good intentions. One of the primary responsibilities of the virtual leader is to build trust between all members and parties, which will result in increased motivation within the group (Zaccaro & Bader, 2003). Leaders operating in a virtual environment must acknowledge the importance of trust in building successful teams. Team members are often motivated by different factors, which require the leader to understand and communicate what determinants, such as traits, skills, and behavioural patterns, are incrementing trust. Research suggests that the leader's behaviour and actions are critical components for the team members to increase trust. Leaders that promote coherence, knowledge management, shared understanding for better decision-making, increase motivation, communicate effectively with the right technologies for the right tasks, and promote efforts to work well together, have been shown to increase trust and, in the process, decrease losses within the procedures. (Raisinghani et al., 2010)

3.2.4 Diversity

Diversity is another factor that may increase the challenges of leading a team virtually. There are several examples and factors of diversity that can be identified within global virtual teams, such as location, culture, and communication. Therefore, various processes of identification and execution of work can get complicated (Brunelle, 2012). Nunamaker et al. (2009) listed different ways for leaders to overcome challenges related to team diversity. The virtual team leader should add activities to the team environment that promotes team building, addresses the vagueness of remote working and communication, respond to the increase of competing requirements, and establish better relationships with the team. Diversity can also be addressed by promoting a sense of inclusiveness and belonging that may, in return, keep the workers more engaged (Leonard, 2011). Furthermore, by addressing language and message differences, the leader can clarify communication for all members with more consistency. Lilian (2014)

discussed the importance of e-leaders ‘designing a cultural mindset’ to address diversity-related challenges such as communication styles, culture, and geographic location.

Finally, research has shown that leadership in a virtual environment requires different activities and a considerate attitude to avoid conflicting situations. Diversity can bring up new viewpoints resulting in conflicts; however, a successful virtual team leader can turn diversity and challenges into opportunities that make the team prosper.

3.2.5 Other challenges

Other challenges identified for leading in a virtual environment have been identified by several authors.

Table 1. Other main disadvantages associated with virtual teams (Ale et al., 2009)

Challenges	Authors and References
Conflict management in a virtual setting	(Hinds and Mortensen, 2005, Ocker and Fjermestad, 2008, Kayworth and Leidner, 2002, Piccoli et al., 2004, Wong and Burton, 2000, Ramayah et al., 2003)
Conflicts and power struggles	(Rosen et al., 2007, Cascio, 2000, Kirkman et al., 2002, Taifi, 2007)
Challenges with technology and requirements of complex technological applications	(Johnson et al., 2001, Bergiel et al., 2008, Badrinarayanan and Arnett, 2008)
Challenges of determining the appropriate technology for the task	(Qureshi and Vogel, 2001, Ocker and Fjermestad, 2008, Griffith et al., 2003, Badrinarayanan and Arnett, 2008, Bell and Kozlowski, 2002, Pawar and Sharifi, 2000)

Special training and encouragement need for employees	(Ryssen and Godar, 2000)
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3.3 Leadership skills in a virtual environment

Leading in a virtual team environment requires additional skills and considerations compared to traditional face-to-face leadership. A positive effect on output quality based on 54 effective virtual teams had a shared understanding of critical factors such as roles, responsibilities, expertise, interdependency, requirements, goals, and objectives (Malhotra and Majchrzak, 2004). Further, Shachaf and Hara (2005) have enlisted four productive and persuasive leadership factors: Communication, Understanding, Role Clarity, and Leadership attitude. Besides, Järvenpää and Leidner (1998) stated that organisational and cultural barriers might significantly affect a virtual team due to 'new' forms of supervision.

Organizations are facing a vital challenge to produce leaders that can lead and manage in a complex modern virtual environment. A significant discussion within the research is leaders' and employees' skills and requirements to thrive in a virtual environment. The accountability and responsibility often fall under the manager to ensure that the team is receiving enough training and is compatible enough to work remotely (Hunsaker and Hunsaker, 2008). The importance of training in areas such as communication, project management, technology, and self-management are crucial factors for both managers and employees for sufficient virtual work (Bal and Teo, 2001).

Research conducted by Dennis et al. (2013) highlighted answers by several respondents to identify essential skills for leaders operating in a virtual corporate environment while pointing out the differences from a 'traditional' face-to-face setting.

For all leaders, based on the responses, it was to set up measurements for work goals and projects, extreme clarity with directions and goals with a significant focus on the entire perspective, work with considerable difficulty, and promotion of commitment to

the organization. A vast difference in leading in a virtual environment was the utilization and handling of process facilitation skills in meetings, auditing long-term team progress, work-life balance within a 24/7 online access environment, and establishing and upholding trust in a divergent multicultural surrounding. Other minor differences were communications skills and high-performance team development.

3.3.1 Effective communication

Effective communication is a core pillar in succeeding within a virtual environment. According to Brown et al. (2007), a formal face-to-face meeting consists of 70% non-verbal interaction, which vanishes in a virtual team setting. This fact increases the role of effective communication due to its vitality in inheriting uncertainties and adversities (Bal and Teo, 2000; Hossein, 2012). Bergiel et al. (2008) similarly stated that leaders who can efficiently and effectively interact with distributed team members have an excellent opportunity to succeed within the virtual environment. The companies that are taking on virtual-based projects should be mindful of considering proper training for the virtual team leaders operating in a virtual environment. Communication effectiveness is highly correlated with maximizing electronic communication technologies. Hossein (2012) and Anderson et al. (2007) declared the importance of effective communication in early virtual team development and how it is obliged for building a top-level organization and team. Further, the quality and quantity of communication the virtual team leader provides are instrumental in gaining, maintaining, and building trust. Moreover, Montgomery et al. (2016) explained that leaders should aim to keep open communication and be more transparent with information access in virtual leadership.

3.3.2 Feedback

Providing feedback within the virtual environment is crucial for effective leadership. Geister et al. (2006) advocated that dispersed team members often feel insecure due to insufficient feedback on how the job is being performed. Constantly providing feedback is a requisite for upholding a high-performing virtual team environment. Feedback is not

only limited to general performance; it helps maintain and develop trust (Jarvenpaa, 1988), understand mutual agreements between team members (Olson and Olson, 2006), and increase motivation and satisfaction (Geister et al., 2006).

Griffith et al. (2003), in the book "Virtual Teams That Work - Creating Conditions for Virtual Team Effectiveness", highlighted various Knowledge, Skills, and Abilities (KSAs) for virtual team leaders. As stated by several corporate executives, the most significant success factor for virtual teams is strong and effective leadership. Leaders and managers of all types of teams have a significant duty in setting high expectations, forming group culture, counselling, coaching, stating and shaping the mission, motivating team members, setting up and organising meetings, handling conflicts, and evaluating individual and team-based performance. As for virtual teams, leaders must find ways to accomplish the KSAs mentioned above.

3.3.3 Goal direction

As earlier stated, the lack of face-to-face interaction in virtual teams increases the probability of misunderstanding goals and objectives. Therefore, the virtual team leader must set clear directions and goals for their team members to ensure project success (Kurt, 2012). Several authors (Bal and Teo, 2000; Bergiel et al., 2008; Hunsaker and Hunsaker, 2008) within the field of virtual leadership have identified the vital importance of objective clarity and goals for successful outcomes. Brake (2005) stated that: "beating confusion through promoting clarity" is the most effective way to ensure efficiency within virtual leadership. When leaders assign tasks to the team members, clearly explaining expectations and highlighting the procedures, employees have been shown to increase job satisfaction and reduce uncertainty. Furthermore, clear goals, directions, and vision allow the team members to increase self-awareness through self-regulation and understanding of personal performance (Arvidsson et al. 2007). Kurt (2012) concluded that clarity is of extreme importance for project success in a virtual setting.

3.3.4 Conflict resolution

Conflicts can occur in any type of team, and the beginning of conflict can vary. The dimensions within a virtual environment range from spatial and temporal dispersion related to task, responsibility, and role. Cultural dispersion correlates with cultural differences, and organizational dispersion with a lack of group cohesiveness and weak identity. A common nominator for all dimensions of sources of conflict has a lack of trust. (Shin, Y. 2005). There are several methods for conflict resolution within virtual teams, such as arbitration, litigation, facilitation, mediation, and negotiation, with mediation and negotiation being the most common ones. Research suggests that for successful leadership conflict resolution, interpersonal skills are necessary. Leaders need great listening and communication skills, show empathy and high-level team orientation. Since virtual communication is notably different from a face-to-face setting, active collaboration and cooperation are necessary. Good practices for leaders are to contact the person responsible when conflicts arise immediately, respond to emails within a day, utilize video platforms if possible, and even email figures (Mortensen & Hinds, 2001; Hiltrop and Udall, 1995; Shin, 2005).

3.3.5 Role modelling and coaching

The first obligation for a leader overseeing a virtual team is to act and serve as a role model for the group. Part of it is for the leader to show that he/she understands all aspects of leading in an online environment. Leaders must form guidelines for specific skills and strategies required for successful virtual working. Virtual team leaders' qualifications for serving as role model demands the willingness to transparently share information, use collaboration software, choose the right technology for the proper purpose and task, and embrace norms of instant responses online. It is common for team leaders to act as 'virtual coaches.' Coaching looks different depending on the work and the leader. Examples of virtual coaching can be to introduce and train the member to use new technology and for others helping a member of the team with best practices for online thoughtfulness and diplomacy in virtual communications. One team leader stated,

“I do a lot of virtual handholding,” which means in this context that isolated members of the team get to hear that their contributions and work are valued. (Blackburn et al., 2003)

3.3.6 Appraisal

The same subject discusses the challenge for virtual team leaders to give ‘virtual pats’ to those performing extraordinarily. Exceptional sensitivity to cultural divergence in choice for recognition is required by the leader rewarding his/her virtual team members. Excitement for group performance celebrations might be lost when team members are spread virtually across the globe. The skill that leaders in this setting are required to create innovative solutions and ways to reward the team members and their accomplishments. (Griffith et al., 2003)

3.3.7 Focus

Lost focus is a common factor for virtual teams. It highlights the importance of virtual team leaders to maintain and uphold goals and objectives for the work (Kimball and Eunice, 1999). Constant reminders of the team’s responsibilities, especially in global virtual teams, are essential. One team leader stated, “My job is to remind my virtual team members who does what, by when,” whereas another explained his role as “managing by walking around in virtual space.”

3.3.8 Awareness

High-level awareness can help the leader to oversee the mission, strengths and weaknesses, and the dynamic of the group. For effective virtual leadership, three various types of awareness were listed by Hunsaker and Hunsaker (2008). For better team synergy, activity awareness was mentioned as a critical trait for administering general availability and team schedules. Social awareness helps the leader to understand the team members, their intentions and their motivations. It also helps the leader to identify social interactions within the virtual environment. Finally, process awareness, which is considering the project structure and how project breakdowns are best distributed

across the overall project. Kurt (2012) stated that the better leaders know their team members, it helps them make sophisticated leadership decisions for any potential disputes or concerns. Furthermore, virtual leaders that know how the workers are doing, their availability, schedule, well-being, and feelings can help him/her to correct any failures and unproductivity arising from the loss of synergy or lousy performance.

3.3.9 Technological skills and knowledge

Technology skills and knowledge are essential components in succeeding with distant leadership. A virtual team leader cannot sustain successful collaboration without some technical savviness. Cascio and Shurygailo (2003) explained that for effective virtual team leadership, the leader needs to identify when to use what type of electronic communication. Virtual leadership is highly validated and revealed by various information and communication technologies. Not only is it enough that the leaders possess technical knowledge and skills, but the team members do too. Virtual leaders are obligated to ensure that the team members are up to date with new technology communication practices and how to utilize various chosen technologies for their benefit and purpose (Zigurs, 2003). Process and project effectivity may suffer and stagger if there are significant differences in ICT skillsets.

Good leaders should understand what it means to lead in a constantly changing digital environment with team members spread across regional barriers. Virtual leadership is, to some extent, ambiguous. Which leadership skills and factors are the ones truly distinguish good from great virtual teams? (Dennis et al., 2013)

One of the main challenges for leaders leading in a virtual environment in the 21st century is to find effective ways to work and lead by bringing the collective energy from the team for the organization's objectives.

3.4 E-leadership skills in the Covid-19 era

Although most fundamentals of virtual leadership are still the same, modern e-leadership, especially during the Covid-19 pandemic, has brought up new skill requirements for the virtual leader. Pre-covid skills have been listed and discussed in the sub-chapter above, whereas chapter 3.4 discuss relevant e-leadership during the Covid-19 era.

In recent times, a major focus of research discusses the importance of a virtual leader being competent in virtual environments, possessing a high knowledge of ICT tools and knowing how to use them professionally (Van Wart et al., 2019). Being competent in using ICT tools would also help the virtual leader to integrate traditional communication media with ICTs. As Darics (2020) discussed, leading through digital channels requires a broad set of skills, with technology competency being at the forefront. Technical knowledge is the door that opens the possibility for e-leadership; without that, there is no e-leadership. Within the context of the Covid-19 pandemic, the rapid shift from traditional work to virtual work required virtual leaders to quickly adapt quickly to a virtual environment. Further, leaders that are faced with new technologies have the responsibility to identify proper management processes and working solutions. In addition, the leader needs to promote the organizational mission, vision, and values by creating and maintaining the identity of the team via digital channels.

Torre & Sarti (2020) highlighted other critical skills for effective e-leadership. Among these, basic social and communication skills, team skills, change management skills, and trust-building skills were mentioned. Other features found to be important skills within 'emerging' e-leadership highlighted that proficiency in communication and interpersonal relationships are still crucial to avoid the risk of unproductivity. Similarly, Van Wart et al. (2019) noted that trustworthiness is increased by the following competencies: honesty, follow-throughs, being fair, integrity, balance with work and personal life, and being diversity supportive. The direction toward change is another critical attribute of e-leadership. For example, it refers to the virtual leader being able to promote a different

culture that is accepted by digital natives as well as an older generation of workers. For those having difficulties with cultural change, an ad hoc approach must be proposed. As the Covid-19 pandemic took over, it forced all age generations to take part in the virtual working environment. It is common within e-leadership that virtual leaders must operate in fast-moving circumstances. Therefore, the capacity to decide quickly and take on risks has been identified as an essential attribute of effective e-leadership.

As briefly mentioned in Chapter 3.1 by Liu et al. (2020), knowledge management is another skill requisite by the virtual leader. It is a process of how a company shares, organises, and analyses its knowledge with its employees. The virtual leader is required to know how the process can be most effectively practised in a virtual environment. The traditional way of storing, organizing, and analysing knowledge was mostly paper-based, whereas the modern solution is cloud-based. Furthermore, the surge of virtual work pushed by the pandemic has forced a lot of companies to become paperless as the information flow has to be shared digitally.

Innovation was mentioned as another critical e-leadership characteristic. The importance of identifying a need for change and promoting innovation within organizations and teams (Schwarz Müller et al., 2018). That stated, the company's mission and focus should not be disrupted due to the constant change, which e-leaders must be mindful of. Therefore, important characteristics noted by Cortellazzo et al. (2019) that e-leaders should have are flexibility, innovativeness, and clear organizational goals. Furthermore, leaders have to adapt to flexible work arrangements and new virtual environments to continue upholding performance (Contreras et al., 2020). Torre & Sarti (2020) stated that a competent virtual leader possesses a clear vision of the leadership role in mixing innovative and traditional skills. Both skills are important for promoting balance in team development.

Emotional Intelligence (EQ) for team effectiveness in a traditional setting has been confirmed by several researchers (Nafukho et al., 2016; Thory, 2016; Rezvani et al., 2016;

Miao et al., 2016). However, limited data is available on how EQ relates to the virtual environment. More recently, Mysirlaki & Paraskeva (2020) observed in their study that EQ is crucial in all aspects of virtual team effectiveness.

3.5 The theoretical framework of the study

A theoretical framework has been developed for this master's thesis. The first part of the theory presents the concept of virtual teams. This chapter of the theory reviews and discusses the history and development of virtual work and teams from two decades until the present day. A primary focus within this theoretical chapter is comparing virtual teams and traditional team models, what tools and technology are most used, and advantages of virtual teams. In addition, it gives the context of the "new normal" derived from the Covid-19 pandemic with the emergency-learning-institutionalization-new normal (ELIN) framework.

The second part of the theory presents the concept of virtual leadership (e-leadership). The definition discusses the evolution of the e-leadership concept and how it has evolved to a broad concept covering several aspects of virtual leadership. A primary sub-chapter reviews the most common challenges for leading in a virtual environment that also highlights disadvantages. The most identified challenges are communication, distance and time, trust, and diversity. Furthermore, other challenges were related to conflict management, technology requirements, and the requirement of special training and encouragement.

A secondary sub-chapter for this chapter reviews common leadership skills in a virtual environment that highlights essential aspects of a successful (virtual) leader. The skills in question are but are not limited to effective communication, feedback, goal direction, conflict resolution, coaching, appraisal, focus, awareness, and technology skills. In addition, more recent e-leadership skills were identified within the context of Covid-19.

4 Research Methodology

This chapter of the research will outline the methodological choices considered for this research. The research approach and philosophy are first discussed and followed up by the research design and methods. Furthermore, the approach of data analysis is discussed, followed by the authenticity and validity of the research.

4.1 Research philosophy and approach

Saunders (2020) defines the term research philosophy as *“a system of beliefs and assumptions about the development of knowledge”*. The term can be seen as complex; however, it is simply a process of creating and gaining knowledge within a specific area. The knowledge that is being generated may not change the industry in a major way, but just by addressing a minor issue, one is still contributing to new knowledge.

According to Saunders (2020), there are three major research philosophies – epistemology, ontology, and axiology. Epistemology can be seen as how knowledge can be communicated to others and assumptions about knowledge. The epistemological assumptions by researchers may determine the methods they use, as well as the limitations and strengths of the research results. Ontology forms how researchers study their research objects, and the concept concerns the assumptions about the nature of reality. In addition, ontology determines the worldview of business and management that influence the research topic choice. Axiology refers to the role of ethics and values in research. A researcher has to decide how much their beliefs and values impact the research. It is important to articulate one’s values to make judgments on research methods and topics. As an example, conducting face-to-face interviews in comparison to an anonymous survey may suggest that the researcher is valuing personal interactions. All these research philosophies have an important role in shaping the researchers' approach to the study and how they understand the findings.

A management philosophy that has been chosen for this research is interpretivism. Saunders (2020) states that *“Interpretivism emphasises that humans are different from physical phenomena because they create meanings”*. The philosophy takes into consideration the difficulty of collecting data from participants of the research. It also accounts for the researcher’s roles, beliefs and values within the research process. Interpretivism can be seen as suitable for business and management research for several reasons. Situations within a business context can often be unique and complex, which may result in various interpretations and the making of meaning. Through interpretivism, it is possible to catch the differences and ‘richness’ of individuals and their situations. It also takes into consideration that workers and customers from diverse backgrounds may experience organizations and events in different ways. Finally, interpretivist researchers require an empathetic stance which would allow them to better comprehend the social world of research participants, which increases the appropriateness for studying situations within business and management.

The approach taken for this research is abductive, which is a combination of a deductive and inductive approach. As Saunders (2020) explains, deduction is moving from theory to data and induction from data to theory; the abductive approach is moving back and forth, combining the two aforementioned approaches. The abductive approach allows flexibility for the research as it allows the researcher to modify various theories based on attained research data, such as interviews. As interviews may provide detailed data, through the abductive approach, it is possible to explore the phenomenon and identify patterns and themes. Furthermore, business and management research is often combining induction and deduction; the abductive can be of higher relevance to real-world business situations. It is possible that insights are offered that can then be used in a business or management context.

4.2 Research Design

The research design is a general plan for how research questions will be answered. It includes clear objectives, sources of data, collection of data and analysis methods. The

research design outlines the process of how a researcher will answer the research questions and meet the objectives of the study. Part of the research design is what methodological approach is taken, such as quantitative, qualitative, or mixed methods. (Saunders et al., 2019)

For this research, a qualitative research design is used. Commonly, qualitative research is linked with an interpretive philosophy which would make the qualitative research design a natural choice for this study. Qualitative research is also flexible as it can make use of deductive, inductive, and abductive approaches for the development of theory. A common characteristic of qualitative research design is the focus on research participants' relationships and meanings utilizing different data collection methods. The depth of understanding of leadership phenomena can provide an abundant interpretation of leaders' experiences, motivations, and decision-making processes. The exploratory nature is also evident in qualitative research, as the design aims to understand the emotional experiences and attitudes of leaders and their followers. Furthermore, techniques within qualitative data collection are in-depth and semi-structured interviews, including internet-mediated interviews. (Saunders et al., 2019).

The main purpose of this research is exploratory. Saunders (2019) describes an exploratory study as *“research that aims to seek new insights into phenomena, to ask questions, and to assess the phenomena in a new light.”* Common questions for an exploratory study often start with “What” or “How to understand what is happening and get the awareness of the research topic. For this thesis, of a total of 3 research questions, 2 of them include the word “How”. In addition, the exploratory nature of research is adaptable and flexible, which allows a change of direction from new insights and data. Finally, for this research, exploratory research is seen as valuable to advance primary comprehension of virtual leadership challenges and skills due to a lack of existing knowledge.

For this research, the time horizon chosen is cross-sectional. Cross-sectional research does capture a “snapshot” of a particular phenomenon within a specific timeframe. As the interviews for this study were conducted within a two-week timeframe, a cross-sectional approach was more relevant in comparison to a Longitudinal study which is often longer. Furthermore, for time-limited projects and research, such as a master’s thesis, cross-sectional studies are often more suitable due to the shorter span of data collection. (Saunders et al., 2019)

4.3 Research Methods

Research methods are ways to collect and study data. In this chapter, the thesis research methods for studying qualitative data are discussed. Sampling, data collection, and data analysis are thoroughly covered.

4.3.1 Sampling

Certain delimitations have been set for this research. The research will focus on virtual leaders in the private sector during the COVID-19 pandemic. This specific focus is vital as the COVID-19 pandemic has rapidly accelerated the shift towards virtual work and remote leadership, making it crucial to understand the challenges and opportunities that this presents for leaders in the private sector. By limiting the scope of the research to the private sector during this specific period, the thesis will be able to provide an in-depth examination of the unique challenges and opportunities that virtual leaders in this context have faced. It will also provide data on what skills are necessary for effective leadership and how virtual leadership has evolved during the last three years. This information can inform future strategies for virtual leadership in the private sector, particularly in the context of crisis or disruption.

A total of 8 interviews were conducted for this thesis. All the interviewees have experience with leading virtual teams or project-based teams during Covid-19. Each interview started off with general questions to confirm that the interviewee was a

correct fit for the segment. The questions covered company position, how long they have held the position, the industry, and how many (if any) subordinates they have. More specifically, a requirement for the interview segment was the leader has been working remotely at least at some point during Covid-19 with at least one subordinate. No specific industry or country requirement was set for the segment. Furthermore, self-selection and volunteer sampling techniques were chosen for this research to better find relevant candidates for the research (Saunders et al., 2019).

All personal details have been left out to protect the identities of the participants, including companies. More specific information can be found in Table 2 below.

Table 2. Interviewee information

Participant	Role	Industry	Subordinates	Interview Length
Interviewee 1	CEO	Banking	11	1h 7 min
Interviewee 2	MD / SVP Marketing	Marketing	5	20 min
Interviewee 3	Project Manager	IT Training	7	54 min
Interviewee 4	Head of Partnerships	Technology	3	41 min
Interviewee 5	SR Account Manager	Marketing	8	1h 5 min
Interviewee 6	SR Manager	Technology	80	46 min
Interviewee 7	CX Manager	Technology	5	1h 13 min
Interviewee 8	Co-Founder and Growth Manager	Marketing	9	42 min

4.3.2 Data collection

For this research, interviews were chosen as the preferred data collection method. Interviews were identified to be the most suitable alternative to address the thesis objectives and research questions, giving the interview candidates the opportunity to reflect openly on the questions. In addition, the qualitative research design in this study aligns well with using interviews.

The adopted standpoint that is being taken in this study is the so-called emotionalist (Silverman, 2013). It aims to utilize open-ended interviews to understand real expressions and occurrences by the interviewees with a focus on human emotions, viewpoints, understandings, and perceptions (Eriksson & Kovalainen, 2016). Due to the

exploratory nature of the study, the interviews were semi-structured. The non-standardized nature of semi-structured interviews allows the researcher to identify potential new themes that may emerge from the already predetermined themes and questions. (Saunders et al., 2019).

Mostly open-ended interview questions were used to get more data from the interview participants. (Eriksson & Kovalainen, 2016). The specificity of the open-ended questions varied, depending on the nature of the questions. For example, starting a new 'interview chapter', a more open-ended question was asked to get the participant to share freely. More specific open-ended questions were utilized within those chapters to get in-depth information for various categories and questions. In certain cases, follow-up questions were asked, and further explanations of the interview questions were provided. All interview participants received the interview questions beforehand so that they could familiarize themselves with the questions.

All 8 of the interviews were conducted through Zoom due to the candidates being geographically distributed in different locations. The shortest interview was just over 20 minutes as it was only a follow-up interview based on the respondent already giving answers in text former, whereas the longest ones went over the one-hour mark. In 7/8 interviews, the language was English, whereas one interview was in Swedish, which allowed the interviewee to better share in-depth information on the topic. Although having the camera on was optional, everyone chose to have the camera on. The interviews have been recorded and transcribed for data analysis.

4.3.3 Data analysis

After the data gathering, the next step was to analyze the data to identify new information for the research topic. Qualitative content analysis is defined by Eriksson & Kovalainen (2016) as *"the ways of analyzing the content and meaning of different types of qualitative data."* Researchers often use qualitative content analysis to analyse various

types of qualitative data, including written documents, interviews, and recordings. This method aims to understand what was said, how it was said, and why.

In addition to qualitative content analysis, the data were analysed using a method known as thematic analysis. Thematic analysis is a common technique used to analyse data within qualitative research studies. This method involves identifying and analysing patterns and themes within the research data, in comparison to quantitative research, which typically uses statistics to study large amounts of data. The purpose of thematic analysis is to identify relevant themes from the data that can be linked to the core research questions of the study. This method allows researchers to identify patterns, trends, and relationships within the data that may not be as transparent with other types of analysis. The main goal of the thematic analysis is to understand the data and to understand the underlying meaning of the data. (Maguire & Delahunt (2017).

One of the key elements of thematic analysis is identifying assorted themes present within the data. These themes can be related to various aspects of the research question, such as participants' experiences, attitudes, or behaviours. Once the themes have been identified, they can be grouped together and analysed in more detail to gain a deeper understanding of the data. (Braun & Clarke 2006)

Thematic analysis is particularly useful for qualitative research as it allows researchers to gain a rich, in-depth understanding of the data. Unlike quantitative research, which relies on statistical analysis to conclude, qualitative research often requires more interpretive and subjective analysis.

Finally, in short, here is an overview of how the data was analysed: The audio recordings were transcribed in their entirety into a spreadsheet, with each column being one of the questions asked and divided among the eight interviewees. The transcribed spreadsheet was reviewed and refined to select the most relevant data that matched the original research objectives and questions. The relevant data was highlighted to get a better general overview that could be further reduced into smaller units. The smaller units were

then coded into terms such as "Empathy," "E-leadership", and "Challenge" to easily identify the answers and highlight the most important parts of the full answer(s). Unique (i.e., standalone) answers were given special consideration to enhance the validity of the thesis theory. The unique answers often had similar meanings to the other answers

4.3.4 Reliability and validity

Another important aspect of research is to produce precise and correct results. Therefore, the reliability and validity of the study are essential indicators of quality.

According to Saunders (2020), reliability refers to “replication and consistency,” meaning that repeated consistency within the results would suggest that the research is reliable. So-called internal reliability is a concept of continuing consistency throughout research that is realized by several researchers conducting interviews, data analysis, and observations. Due to limited time and the complexity of getting another researcher, this idea did not proceed. However, various factors to create further reliability were taken into consideration by recording and transcribing all interviews. Worth noting is that there is a high importance on ensuring reliability since research that is unreliable is considered unfounded because of biases or errors that affect results and understanding. Some notable threats to reliability are participant error, participant bias, researcher error, and researcher bias.

In contrast, Saunders (2020) stated that validity refers to “the appropriateness of the measures used, accuracy of the analysis of the results and generalisability of the findings”. In simple terms, the appropriateness and accuracy of the research. The concept assures that the analysis of the results is accurate and that the research assesses what it intends to assess. Finally, it helps to determine whether the conclusions drawn within the research are credible and based on sound reasoning. To increase the level of validity, the interview questions were sent to the participants in advance so that they could prepare and familiarize themselves with the material.

5 Findings

The fifth chapter of this research is the empirical part, where interview findings are discussed in connection to the study's theoretical chapters. As addressed in the introduction of the thesis, the primary purpose of this research was to understand leaders' challenges in leading virtual teams and what skills are needed to lead effectively during Covid-19. The main research question is, "How has leadership evolved during the Covid-19 pandemic?". A total of 8 interviewees' answers are discussed and analysed in this chapter.

Finally, this chapter is divided into three main categories dividing virtual teams and e-leadership, challenges, and skills. The leadership change and evolvement are discussed within each chapter and not as a separate chapter. For clarity, the following objectives have been set for the study:

1. Identify challenges for leaders leading virtual teams during the Covid-19 pandemic.
2. Understand what skills successful leaders require in leading their teams during the pandemic.
3. Understand how virtual leadership may have changed from the start of the pandemic until now.

5.1 Virtual teams and e-leadership pre- and post-Covid-19

This sub-chapter discusses the interview participants' previous remote working experience until the present day and what technology they have used.

5.1.1 Remote work experience

Many interviewees had some remote working experience before Covid-19; however, the experience varied largely. From the outtakes below, it is possible to see a major contrast in remote working experience:

“Yes, in my previous company. It was another tech company with a globally distributed team. So, I did have global remote work experience so when I went into covid, it wasn't a shock to me as I had worked previously in this fashion.” – Interviewee 4

“Very briefly, but I would say no. Like prior to Covid I would be in an office.” – Interviewee 5

Notably, those who had previous experience within a remote environment found the transition to working remotely more comfortable than those who had less experience.

During Covid-19, all interviewees experienced a shift towards remote work. However, there is variability in remote working frequency that ranges from partly at the office 50% (Interviewee 8) up to 100% (Interviewees 2, 4, and 7). This may suggest that organizations and individuals have adapted in a different way during the pandemic. In contrast, interviewees 1, 5, and 6 stated their companies had transitioned back to the office, at least partly. The findings in remote work experience may suggest that different organizations and individuals have a different approach to the extent of remote work in a post-Covid time.

The pandemic has also affected the interviewees' experiences as leaders during the pandemic in various ways. Several interviewees (Interviewee 1, 5, 6, and 8) stated that understanding and empathy was needed and the importance of being aware of employee challenges during times of crisis.

“It made us more cognizant of the fact to be a little more empathetic. To be empathetic just because you had to step into people's shoes, you know? Your home work environment is not the same as someone else's.” – Interviewee 6

Another notable pattern was the adaptability of the leadership style. Interviewees 1, 3, 4, and 5 all stated that they've had to make changes in how they lead, manage, and communicate. The pattern suggests that flexibility is a key leadership component when transitioning to virtual-based leadership. Earlier research suggests that virtual teams, in general, are more flexible, which may advocate for the leader to adapt accordingly (Bergiel et al., 2008).

5.1.2 The technology used in virtual leadership

For communicating virtually, most interviewees (6 out of 8) are using Zoom, Microsoft Teams (4 out of 8), and Google Meets (4 out of 8). As noted, a few interviewees are using several different tools. Slack and WhatsApp are also popular communications mediums that 3/8 of participants use. In theory, Singh et al. (2022) discussed that MS Teams and Zoom had become popular communication tools during the pandemic, as it gives freedom for employees to join and leave when preferred without having to receive a call. Project management tools such as Trello, Asana, ClickUp, Basecamp, and Pipedrive were also mentioned for managing various virtual projects. However, none of these was mentioned more than once per interviewee, which may suggest that the project management tools are dependent on individual and organizational preferences and needs. Real-time collaboration tools such as Google Suite products (Docs, Sheets, and Slides) have been used by several interviewees. One interviewee stated:

“For a global company, we also utilized real-time collaborations tools like Google Docs and Google Sheets so that multiple people can go into docs and edit in real-time.” – Interviewee 4

Another finding was the integration of tools through other technology ecosystems. For example, the communication tools Slack integrated with Google Drive or MS Teams with SharePoint and OneDrive. Once again, it may point to individual and organizational preferences and requirements.

5.2 E-leadership challenges in a virtual environment

This sub-chapter discusses e-leadership challenges in a virtual environment with a focus on communication, distance and time, trust, diversity, and other notable challenges addressed by the interviewees.

5.2.1 Communication

Communication tools within virtual environments can be divided into two major categories. One for instant messaging, where several interviewees mentioned WhatsApp and Slack as their go-to platforms. Another for video conferencing where Zoom, MS Teams, and Google Meets were the top choices. One interviewee stated the importance of being mindful of professional and personal communication boundaries, whereas another stated the importance of adapting the communication mediums based on team preference and creating a clear system:

“We don't like to use like WhatsApp or anything because we believe that's really personal for the employees.” – Interviewee 5

“Some people may not want to communicate on their phone, other people's other people may want to communicate via Slack. Others through like video one-on-one chat. So really understanding how your team wants to communicate and then creating that system so people know, okay, if it's an emergency, I'm gonna text you if it's not urgent.” – Interviewee 4

For one of the interviewees, their organization have created an organizational culture of not having cameras on during the calls to take the pressure off their employees. The notable challenges related to communication tools suggest that professional and personal boundaries may overlap if there are no clear guidelines on which mediums to use for what. In addition, team preference of tools may cause further challenges if several team members have different needs and want from the communication tool. As Torre & Sarti (2020) stated, communication is a crucial skill for e-leadership, which in turn requires the leader to address any potential issues with the team's communication platforms.

Several interviewees mentioned communication challenges that were not present in a traditional physical office work setting. Although most experiences vary, a few potential patterns can be observed. The lack of non-verbal cues and over-reliance on written communication. Within a virtual environment, the non-verbal cues may not be as obvious as they would be in a physical setting. By over-relying on written communication, it is possible that it leads to an anxiety-induced experience or general misunderstanding. This aligns with Kayworth & Leidner's (2002) insight that social and context information could be lost due to high levels of anonymity via electronic channels. Similarly, Puranova & Bono (2009) argued various reasons why face-to-face communication does have an advantage over writing which is the loss of visual and auditory factors.

The interviewees had varying experiences regarding communication challenges, whereas some found it more efficient, and others noted struggles with the lack of face-to-face communication. A focal observation is that communicating in a virtual environment requires structured communication channels and conscious effort to ensure effective communication.

It is notable that communication-related challenges have changed and evolved during the pandemic. One interviewee stated that there had been fewer internet issues today than during the start of the pandemic and that employees have adapted to WhatsApp, Zoom, and other communication platforms well under the pandemic. Another interviewee elaborated on the difficulties at the beginning of the pandemic that got easier throughout the pandemic. Several interviewees shared the same view:

“Beginning phases of the pandemic, I would say the first three to six months was very stressful and hectic because we were all figuring out how to operate in this new environment. But then as the pandemic continued and as remote culture became more and more widely acceptable, we were able to really, process, streamline communication, streamline ways of working and operating in this new world.” – Interviewee 4

Overall, whereas general communication has become easier during the pandemic, mostly due to great technology, there are still challenges, such as convenience in remote work, trust, and equality, that needs to be addressed.

5.2.2 Distance and time

Challenges related to distance and time in a virtual environment were addressed by several academics. Zaccaro & Bader (2003) stated that a common challenge is to quickly address and respond to employees, and Cummings (2011) noted that coordination burdens might increase due to a deficiency of geographic distance and lack of overlapping work hours. Time zone issues, the context of communication, and trust have also been addressed as challenges related to distance and time. (Zeuge, 2020; Gazor, 2012) The literature emphasizes several findings by the interviewees.

Challenges related to the lack of physical presence had several varying views the interviewees when asked if the lack of physical presence has created any challenges:

“I feel like these extempore errands are easier to conduct in an office setting where I can get hold of someone immediately, instead of reaching out to someone and book something. It is also common that the employees are not always sitting by their Teams (computers) when working from home. The errands are often not that urgent so in that sense I wouldn't say that there have been any major challenges for this aspect.” – Interviewee 1

“In a physical setting you get more done, more efficiently just because you are there and you can visualize things and you can see how people act and how they move their face and how they express themselves. This, you lack so much in the 2D environment, right? And especially if you have the camera turned off. Then you said to me, Ronnie your head looks really bad today, or Hair looks really bad today. And then you look at me with a queer quirky smile, but I can see your quirky smile. So then I take it as an insult, even though you met it as a joke with like smile on your face. These things are the big lack when you are not in the physical space.” – Interviewee 8

Some interviewees found no significant challenges; however, some notable patterns were observed. The workday can blend or blur when working within different time zones,

especially in a leadership position where responsibility is crucial. The time zone issue was mentioned by several interviewees. Furthermore, interviewee 6 mentioned that you get more exposure to projects and collaboration opportunities in a physical setting. This was also mentioned by Interviewee 4 when asked about virtual team advantages and disadvantages.

“...virtual teams democratize everyone, that means if you have a hybrid structure or some people are going into the office because they are proximately close to the office and others who are not, it creates a disadvantage because relationships are being built in-person whereas other people are virtual, so, when everyone is virtual, then it creates an even level playing field for everyone to contribute and to progress their career in an equal fashion with their counterparts” – Interviewee 4

Quick errands and “getting the hang of people” were mentioned by a few interviewees, and it seems that the physical environment is more suitable for collaboration and random interactions. Social interactions and small talk were seen as important when developing deeper connections. The constant feedback is also taken away in a virtual environment. Monitoring and maintaining trust were also mentioned a few times as a challenge within the virtual environment.

The distance and time-related challenges have both evolved and changed during the pandemic. A general agreement among the interviewees shows that working virtually has its advantages, and emerging solutions have come with it to address any issues. Working strange hours have become more normal; however, using digital tools responsibly within the virtual environment has become more important.

5.2.3 Trust

There are different opinions and perspectives on trust-related challenges within the virtual environment. Cascio and Shurygailo (2003) stated that trust is more important in a virtual setting as the significance is set on expectations by the team to constantly deliver promised outcomes. The finding aligns with one of the interviewee's experiences with trust:

"I do have had experiences where, people would say, oh, I'll complete it by Friday, and then, you don't see it on Friday, so then that creates, lack of trust. Then I'll have to be a little bit more involved in their process to understand what's going wrong."
– Interviewee 4

It is also notable from the findings that trusting someone may be individual, suggesting that certain employees based on their work performance, may not be fit for working from home:

"A bit individual case, some are not fit for working from home. I feel like it is good to have a bit of office surveillance for certain employees." – Interviewee 1

All in all, every interviewee had some challenges or issues related to trust in the virtual environment. The findings show that the challenges are highly mixed, ranging from factors like difficulties in surveillance, unaccounted time, unmet deadlines and promises, micromanagement and control issues, productivity, work ethics and potential outsourcing. However, the trust issues at its core derive from the difficulty of monitoring employees and ensuring productivity. It aligns with Raisinghani et al. (2010) observation that trust is substantially authorized and provided through communication. The lack of communication in a physical setting may cause trust-related issues, as mentioned by several interviewees when asked about communication-related challenges. It was also mentioned by Raisinghani et al. (2010) that communicating effectively with the right technologies for the right tasks has been shown to increase trust. Ultimately, can trust be considered a communication issue in contrast to a separate entity?

The consistency in trust remained the same for interviewees 1 and 6, whereas other interviewees stated that it has evolved or become easier to break (Interviewees 3, 5, 7, and 8). Interviewee 7 elaborated that trust-related challenges are more cultural and organizational based and not whether the company is operating physically or virtually. Four out of eight interviewees did not find increasing supervision necessary during the pandemic; however, three out of eight interviewees felt a need to increase supervision.

A general consensus among the interviewees highlights the importance of consistent communication and focusing on work output to build trust.

5.2.4 Diversity

Diversity is another category that may cause challenges in operating a virtual team. Brunelle (2012) highlighted diversity-related challenges such as location, culture, and communication as common factors that may cause issues with proper work execution. Nunamaker et al. (2009) and Leonard (2011) highlighted ways to address diversity-related challenges, and research has shown that diversity may bring up new viewpoints that cause conflicts.

Findings show that diversity-related challenges vary between the interviewees. Interviewee 1 stated that their operation is local, so no diversity-related issues were present. Interviewees 2, 4, and 8 addressed that removing geographic limitations in a virtual environment allows for much greater diversity. However, most of the interviewees (interviewee 3, 4, 5, 6, and 7) mentioned challenges that relates to culture clashes, different working styles, and communication:

“...different people communicate differently, and you gotta find common ground to connect with each other.” – Interviewee 6

“...we operate in several regions so there are a lot of different mindsets that clashes. Especially challenges to religion. The government wants to include certain training topics that Muslims are not that receptive to.” – Interviewee 3

The observed pattern identified from the diversity-related challenges shows that they have evolved during the pandemic with a broader understanding of cultural awareness and empathy for virtual work environments. The increased cultural diversity and exposure to diversity within the teams have led to employees becoming more culturally aware, which has led to more effective communication and collaboration. Only 5 out of 8 interviewees answered this question which is preventing a deeper understanding of

this topic; however, the inputs provided by the rest of the interviewees suggest a positive involvement of diversity-related challenges during Covid-19.

5.2.5 Other notable challenges

When the interviewees were asked if they could mention any other e-leadership challenges within a virtual environment, several patterns and key findings were observed.

Boundaries and work-life balance were mentioned by interviewees 5 and 6. The challenge of maintaining both personal and employee work-life balance has been difficult, and it was emphasized that boundaries are necessary to prevent burnout. Although work-life boundaries within the context of Covid-19 is an underexplored area, research suggests similar findings as mentioned by the interviewees, highlighting well-being and work-life boundaries as challenges when transitioning from traditional office settings to a virtual work environment. (Comella-Dorda et al., 2020, Deloitte, 2020). Chamakiotis et al. (2021) discussed that the ultimate virtual leadership challenge is to find practices that ensure their employee's balance at work and home.

Challenges with building relationships and teams were highlighted by several interviewees (interviewees 4, 5, 6, and 7). Notably, it was argued that building strong relationships and team camaraderie is difficult in a virtual environment. The deficiency of regular check-ins and physical presence makes it more difficult to establish deep connections and trust among the team. Similar findings were seen in the theory as Torre & Sarti (2020) highlighted that interpersonal relationships and proficiency in communication are critical skills for e-leadership and to avoid the risk of unproductivity. Nunamaker et al. (2009) stated that the team leader should add exercises to the virtual environment that promotes team building and establishes better relationships with the team.

Another notable challenge mentioned by interviewees 1, 3, and 8 was the adaptation to the virtual environment. A steep learning curve for adapting to e-leadership, how to

manage people effectively in a virtual setting, and dealing with the shock of the pandemic. Interviewee 1 stated:

“The biggest challenge was the 'shock' of how fast Covid hit. We were not prepared at all for anything like this. There were no real crisis management systems in place when Covid broke out. People were half in shock, really, and that was the big challenge in the beginning to understand”. – Interviewee 1

It shows that preparations were not set in place for a pandemic that forced a lot of organizations' employees to rapidly transition to a virtual-only environment.

Technology-related challenges were also highlighted by several interviewees. Interviewees 1, 5, and 8 stated connectivity issues, whereas interviewees 3 and 5 mentioned the challenge of not having a suitable device. In addition, interviewees 6 and 7 see IT security-related matters as a challenge in a virtual environment.

Other individual findings worth mentioning are the importance of self-leadership, emotional support, maintaining productivity and engagement. All in all, the additional findings in this sub-chapter stress the fact that e-leadership is complex, with several different challenges across various industries.

5.3 E-leadership skills for effective leadership in a virtual environment

This sub-chapter discusses e-leadership skills in a virtual environment with a focus on communication, technology and technical skills, change management, trust-building, and other notable skills that were mentioned by the interviewees.

5.3.1 Communication

The importance of communication to succeed in a virtual environment has been highlighted by several academics. Hossein (2012) and Anders et al. (2007) stated that to

build a top-level organization and team, effective communication in virtual team development is crucial. Furthermore, the authors stated that communication quality and quantity provided by the virtual leader are influential in gaining, maintaining, and building trust. Bergiel et al. (2008) mentioned that virtual leaders who can effectively and efficiently connect with a remote team have a great opportunity to do well in a virtual environment.

There are some notable findings by the interviewees when asked, *“what are some communication skills required by a virtual leader?”* and *“how do you ensure effective communication in a virtual team?”*.

The importance of clarity in communication and adapting communication styles depending on the employees was highlighted by several interviewees:

“A lot of Clarity. You have to go down to a basic level when communicating. You really have to double-down on being clear when communicating in a virtual environment. I've been surprised on how many different ways you can interpret something even when you feel like you are writing very clearly. Always ask if the message has been understood and is clear so that nothing is being missed in the context”. – Interviewee 1

“Language, you need to communicate with a language that people understand. Managing a broad segment of people like age and different sectors, you have to communicate accordingly so everyone understands. The older generation may need simpler explanations whereas the younger generation who are more tech-savvy can be taught in a more technical language”. - Interviewee 3

Furthermore, interviewee 6 advised being plain, detailed, explicit, and directive in your communication, whereas interviewee 8 highlighted that using visuals, videos, and diagrams and making communication playful and fun can make communication more efficient.

Other notable patterns noted by the interviewees (4, 7, and 8) were transparency and openness in communication. Interviewee 8 elaborated that you should be using open groups, e.g., Slack, to create environments where everyone can be included in the conversation. Choosing relevant channels and formats for communication was also said

to be important by several interviewees. The format takes the tone of the message into consideration, which can easily be misunderstood in text-based only communication. Finally, three interviewees (2, 4, and 6) stated that empathy is another key communication skill.

All interviewees mentioned some changes and evolvments in communication skills during the pandemic. However, it is shown that the interviewees had different experiences with the change and evolvment. Interviewee 2 highlighted the importance of “watercooler moments” for upholding personal communication in a virtual environment. Also, a strategy of mixing professional and personal updates during meetings. Interviewees 3, 4, and 8 noticed that employees have become more comfortable with using technology tools effectively in the virtual environment. Interviewee 5 noticed a more relaxing approach with hierarchies, procedures, and bureaucracies that have resulted in more open communication. Furthermore, Interviewees 1 and 6 noted that being aware of communication clearly is important to be understood in a virtual environment. It aligns with Interviewee 8’s observation that people have become better writers during the pandemic.

5.3.2 Technology and technical skills

Research suggests that virtual leaders have the responsibility to make sure that their team members stay up to date with communication technologies and selected tools. Processes and projects may suffer from different levels of ICT skills (Zigurs, 2003). In addition, Dennis et al. (2013) highlighted that good leaders need to understand what it means to lead in a constantly changing digital environment. Darics (2020) and Van Wart et al. (2019) noted that leading through digital channels requires a deep knowledge of certain skills, with technology competency being the foremost part.

All interviewees highlighted the importance of having a good command of basic IT skills within the virtual environment. The overall consensus from the interviewees indicates that you do not have to be a pro user of any of the IT tools (e.g., Slack, Google, Microsoft

products). Instead, you should know the basics of the software that your team operates and build on that knowledge over time. However, it is also highly role dependent, as stated by Interviewee 6:

“... let’s say if you were doing design or writing code together or producing music or movies together, you basically need a lot more infrastructure to be able to equip your team and then ensure that they have the necessary skill sets to operate with the technology in a different work environment.” – Interviewee 6

Findings also suggest that it is the virtual leader’s responsibility to provide the team with relevant IT infrastructure to be able to conduct their job properly. Interviewee 5 highlighted that their company sets aside a budget for their employees just to explore new tools within the virtual ecosystem:

“We encourage them to tell us if they've found any new tool that maybe it's interesting that you would like to try? We have designated a budget just for people to be able to explore those tools.” – Interviewee 5

Interviewees 2, 3, 4, and 7 made it clear that technology and technical skills are a prerequisite for getting the job in the first place. The findings suggest that it may be difficult for someone without basic IT skills to get a job within the virtual environment in the first place. Furthermore, company-specific considerations and age were also mentioned by interviewees 7 and 8, explaining that in a technology company, most employees are already savvy with tech, whereas organizations with young people are native to the tech stacks and tools required.

Considerable changes were noted when asked if the technical skill requirements have changed or evolved since pre-pandemic times until today. The acceleration of technology adaptation was mentioned by interviewees 1 and 6.

“This development to know about tech and technology development was well underway already before Covid, but the pandemic sped up the whole process; there were no other alternatives, really.” – Interviewee 1

In addition, Interviewee 6 explained that today, there are a lot better and more options for teams to collaborate and communicate in comparison to pre-pandemic times.

Interviewee 3 said that people are more comfortable and knowledgeable about the tools used in a virtual environment, whereas Interviewee 5 stressed that employees have to stay up to date with technological advancements to remain competitive in the market. Although some interviewees think that the technology skills remain the same, others argue that there has been an increase during the pandemic. The varying perspectives may originate from various backgrounds rather than downright conflicts.

5.3.3 Change management

Change management is seen as a crucial skill for effective virtual leadership (Torre and Sarti 2020). Some key findings and patterns suggest that most interviewees reiterated the importance of communication and regular check-ins to manage change in virtual environments. Being clear about roles and responsibilities, getting to know the employee's backgrounds, and creating an inclusive and motivated environment are critical. Several interviewees also highlighted that a safe environment during change is important. Another notable input by interviewee 2 was related to documentation:

“Commitment to documentation. There are no whiteboards in the conference room - just a zoom screen.” – Interviewee 2

The suggestion can be seen as documentation being important for managing change in an organization. If everything is documented and written down clearly, it may be easier for employees to follow along with the changes that are taking place.

Evolution and change in change management were observed by interviewees 2, 3, 4, 6, and 8, whereas interviewee 5 stated that it has not evolved. Interviewee 8 elaborated on the fact that people are more used to change due to the pandemic:

“I think people are more used to change because of the pandemic, because everything changed so drastically, so people are not that afraid of change anymore because they're more like, how do you learn to live with change? The world is changing. You are changing.

The world has changed, so that we need to be more prepared for change. And I think people woke up for that. And that's the positive side. It's a good thing. It's opportunities. So how do you kinda seize those opportunities as efficiently as possible?” – Interviewee 8

Furthermore, the findings suggest that leaders must rethink decisions and consider the potentially devastating effects of drastic changes without a proper plan. People in a virtual environment have acted in a different way pre- and post-pandemic time, which has resulted in changes in change management approaches.

5.3.4 Trust building

Building trust has been noted as another important skill in the virtual environment by academics (Torre and Sarti, 2020; Uber Crosse, 2002; Hossein, 2012; Anderson et al., 2007). A clear pattern observed by several interviewees (1, 4, 5, 6, 7, and 8) was the importance of regular check-ins, team meetings, and open communication to build trust in the team. An outtake from interviewee 4 summarizes the other interviewee's thoughts and views:

“I think having regular check-ins, having open lines of communication, having team meetings so that everyone can meet each other virtually and see who else is working on different project. Trying to be inclusive and you know ask how someone's day is and what things they like outside of work, so that creates a more human element to it.” – interviewee 4

Furthermore, building trust is a time-consuming and commitment-intensive process that requires the leader to build opportunities for open conversations. Both interviewees 5 and 6 had similar thoughts:

“... you cannot expect somebody to trust you if you don't trust them first. You as a leader need to take that first step into approaching them, into showing them that you trust them, that they can trust you, that they're not gonna have bad

consequences if they talk to you about good or bad things, that you're open to listen. It takes time. It takes commitment and it takes two people, but you cannot ask them to give you first because you are the one that has that leadership position.”
– Interviewee 5

“You have to work at it. You have to do all sorts of different things. Time is number one, to build trust with a virtual team. Having sessions that go beyond work to create a bond. Obviously, work being number one priority, but beyond work to build trust. Overall having opportunities in creating forums where you can actually have open conversations.” – Interviewee 6

Interviewee 8 elaborated on building a bridge between the virtual and physical environment, and Interviewee 3 stated that meeting physically to ensure that the ‘whole thing’ is real so that the employee can trust the leader down the line.

Handling situations where trust has been broken was similarly addressed by several interviewees (1, 4, 5, 6, 7, and 8), stressing the fact that having an open conversation, understanding the circumstances, and challenges of the person and addressing the issue at hand directly. Interviewee 2 sees addressing the issue as an opportunity for the whole team to improve, and interviewee 5 states that, at times, the whole team should be involved.

Notably, building trust has evolved during the pandemic in several ways. A key pattern mentioned by interviewees 2 and 8 suggests that there is more focus on proof of output instead of proof of work. This means that work deliveries are more of a focus instead of time spent in front of the screen. The need for empathy and conscious effort in trust building has increased during the pandemic. Interviewee 4 stresses the importance of regular check-ins in the Covid-19 environment, and interviewee 7 mentioned the importance of conscious investment in trust and relationship building. Due to individual changes and adaptation during the pandemic, interviewee 5 believes that trust building has grown in importance.

5.3.5 Other notable skills

The interviewees were asked if any other e-leadership skills came to mind. Two interviewees (5 & 8) highlighted the importance of emotional intelligence (EQ) in a virtual setting. Interviewee 5 explained that EQ is important both for oneself and the team:

“I think emotional intelligence as a leader it's pretty important that you can process your team's feelings and their frustrations and your own, so you don't pass it on to them, especially when they're uncertain times that are scary for everyone.” – Interviewee 5

Interviewee 8 emphasized that EQ is even more important in a virtual setting than a physical setting since you can't meet in person:

“Emotional intelligence, so really understand people and their psychology. That's where all of this starts. So, leadership is psychology in a sense. You need to understand how people work how people operate and it's even heightened when you are not able to be with the people in person. Learn to understand people even better.” – Interviewee 8

Finally, interviewee 4 stated that the need for courage and adapting to change is crucial for leading during times of crisis.

6 Conclusion

The previous chapter presented empirical findings in connection with relevant theoretical literature. This concluding chapter highlights the main findings of the empirical results while the research question is being addressed. In addition, managerial implications, limitations, theoretical contributions, and suggestions for future research are all covered in this chapter.

6.1 Summary of the main findings of the study

The findings show that the interviewees had varying remote work experiences before Covid-19. The interviewees with prior experience working remotely found the shift more comfortable during the pandemic. Everyone experienced a shift to remote work, varying from part-time to full-time. Notably, different individuals and organizations adapted to working remotely differently, whereas some of the interviewees have at least partly moved back to the office. The earlier findings confirm that a transition to the office with a hybrid approach is gaining more traction (Raghavan et al., 2021; Alexander et al., 2021).

The impact on the leadership experience was seen for several interviewees. Many emphasized the significance of empathy, understanding, and employee awareness during the pandemic. Notably, adapting as a leader and adapting the style of leadership for leading, managing, and communicating was mentioned several times. It suggests that a key leadership trait is the importance of flexibility when transitioning from a physical environment to a remote setting. The findings support the findings where Cortellazzo et al. (2019) highlight the importance of e-leaders being flexible. In addition, Contreras et al. (2020) argued that practices of e-leadership must adapt to new virtual environments to uphold solid performance and effective leadership.

The most common tools for communication in the virtual setting were Zoom, Microsoft Teams, and Google Meets. In addition, Slack and WhatsApp were also popular mediums for communication. Project management tools mentioned were Asana, Trello, ClickUp,

Basecamp, and Pipedrive, but they were not used consistently. It may suggest that tools for project management are individual and organizational dependent based on preferences and needs. Furthermore, collaboration tools in real-time such as Google Suite product software, were used by several interviewees. Similar findings from the theory were noted by Singh et al. (2022), where Zoom, MS Teams, and Slack have become popular communication tools during Covid-19.

The virtual environment requires structured communication and conscious effort for effective communication. Although platforms like Zoom, MS Teams, Slack, and WhatsApp are important, it is crucial to uphold personal and professional boundaries and show respect for team members' preferences. Notably, the theory suggests that work-life boundaries are identified challenges for traditional leaders transitioning to a virtual environment (Comella-Dorda et al., 2020, Deloitte, 2020). In addition, Torre and Sarti (2020) highlighted communication as a crucial skill for leading in the virtual environment and the e-leader is required to establish new ways to communicate. The challenges related to communication have evolved during the pandemic, and the consensus among the participants suggests for the better. Communication is easier due to advancements in technology; however, challenges with trust, equality, and work convenience are still factors that require to be addressed.

A variety among the interviewees regarding distance and time-related challenges was observed. Some noted little to no challenges, where others had issues with time zones, the lack of physical presence and overall diminished opportunity for relationship-building and collaboration. Time zone-related challenges were addressed by several academics, which aligns with the research findings (Liu et al., 2021; Morrison-Smith, & Ruiz, 2020). Further, Contreras (2020) asserted that the pandemic had impacted the relationships between employees and employers. In addition, Van Wart et al. (2019) noted the importance of interpersonal relationships within the virtual environment but confirmed that research on the relationship between leaders and followers had been limited. The work environment change during the pandemic has resulted in remote work

being more accepted. The change and evolvement of distance and time-related challenges suggest that working unconventional hours and responsible use of digital tools have become more common.

Challenges related to trust were mixed with difficulties in surveillance, unmet deadlines and promises, micromanagement, unaccounted time, and work ethics. Communicating consistently with a focus on output was noted as important trust-building factor. The literature supports Raisinghani et al. (2010) input on how trust is considerably provided and authorized through communication.

Communication issues, culture clashes, and different working styles were mentioned as diversity-related challenges. Existing literature supports the importance of diversity-related challenges. Lilian (2014) explained that culture, geographic location, and communication style are all factors that may cause diversity-related challenges suggesting that e-leaders must embrace a cultural mindset. A notable change and evolvement regarding diversity is the increase in cultural awareness and empathy.

Finally, other notable challenges observed were related to technology (e.g., connectivity and IT security), work-life balance, and adapting to the virtual environment.

The findings show the importance of effective communication in a virtual environment utilizing clarity, being transparent and open, adapting to various communication styles depending on the employees, and doubling down on empathy. Mentioned tactics for making communication more effective were using visuals, videos, and diagrams and making communication more engaging. Similar findings can be observed from earlier research. As mentioned earlier by Torre and Sarti (2020), the e-leader is required to establish new ways to communicate. Equivalently, Montgomery et al. (2016) stressed that e-leaders must be willing to keep open communication and be more transparent with information access. The mentioned tactics for making communication more effective were not observed in the literature, which may suggest that it is a personal preference.

Communication skills have changed and evolved during the pandemic for the better, with more comfort in using technology tools, better writing skills, and more open communication.

The interviewees stressed that good command of basic IT skills is important, with some mentioning such skills as a prerequisite to getting the job in the first place. Proficiency in specific software is mostly role dependent. Virtual leaders have a responsibility to stay up to date with advancements in technology as well as provide the necessary infrastructure for their team. A considerable amount of literature suggests the importance of having good knowledge of basic IT skills to lead in a virtual environment. Van Wart et al. (2019) summarizes the industry findings by stating that e-leaders must have an awareness of current ICTs, know how to use the ICTs and also know which ICTs to consider for the organization and for oneself.

A mix was observed in the evolution of technology skills, where some argued that technology adoption has accelerated during the pandemic, whereas others stated that it remained the same.

Change management was observed as an important skill for effective virtual leadership. To manage change in a virtual environment, communication and regular check-ins are crucial. Responsibilities, role clarity, documentation, aiming to uphold a motivating environment, and the importance of a safe environment during change were also highlighted as important change management traits. Change management is moderately mentioned in the literature as a core competency and is noted to be a valid dimension for e-leadership (Van Wart et al., (2019). However, the literature does not provide in-depth specifics on what change management skills are required for a smooth transition to a virtual environment and how to operate in a virtual environment.

Findings suggest that change management has evolved in the sense that leaders have noticed employees' increased adaptability to change.

Trust-building skills were considered vital in the virtual environment. Key patterns from the findings suggest that regular check-ins, team meetings, and open communication are focal for building trust. It requires both time, effort, and commitment from the leader. After trust has been broken, the leader needs to open a conversation, understand the person's challenges, and directly address the issue. Current literature reports similar findings. As earlier observed with trust-related challenges, trust is recognized through communication (Raisinghani et al. (2010) and trust building was highlighted as a core competency of e-leadership (Torre and Sarti, 2020). To build trust, Van Wart et al. (2019) highlighted consistency, honesty, follow-throughs, integrity, fairness, work-life balance, and support of diversity as major pillars for increasing trustworthiness.

The evolution in trust during the pandemic can be seen with the focus on output instead of proof of work and in the importance of increased empathy and a conscious attempt to build trust.

Finally, Emotional Intelligence (EQ) was highlighted as important in a virtual environment by a few interviewees. EQ is crucial for understanding and processing personal and team feelings and frustrations. It was pointed out that EQ can be seen as even more important in a virtual context due to the lack of physical interaction. There is limited existing literature on the role of EQ in virtual leadership. That said, EQ in relation to team effectiveness has been mentioned by academics (Nafukho et al., 2016; Thory, 2016). Notably, Miao et al. (2016) noted EQ as crucial for the satisfaction of team members, whereas Rezvani et al. (2016) highlighted EQ to be linked with greater team performance. Furthermore, recent research by Mysirlaki & Paraskeva (2020) implicated that EQ does have an important significance on all aspects of effectiveness for virtual teams.

In conclusion, the challenges, and skills of leading in a virtual environment affirm the complexity of e-leadership. Effective e-leadership requires a broad set of skills to address any emerging challenges. The pandemic has both changed and evolved the skills required to operate virtually, as well as brought up new challenges to address.

6.2 Theoretical contributions of the study

This master's thesis provides a better understanding of the concept of e-leadership by identifying various challenges, skills, and adaptations in a virtual environment for a post Covid-19 environment. Looking at the already existing e-leadership theory, it is evident that there are still a lot of unknowns and moving pieces that are being added to the concept. This study provides more context to e-leadership and highlights emerging themes of challenges, skills, and their change and evolution during the pandemic. Notably, the challenge related categories observe that communication is crucial, and it is a key pillar for maintaining and establishing trust within a virtual environment. This study also helps us understand that building relationships and team camaraderie are challenging in a virtual environment and there may not be a one-fit-for-all approach for it. "Watercoolers moments", meaning more casual moments when interacting in a virtual environment were seen as important. This thesis contributes additional context for trust building where open communication, regular check-ins, and team meetings must be considered for virtual leadership success. Notably, focusing on work output was identified as important for trust building in contrast to time spent working.

Finally, Emotional intelligence is barely mentioned in e-leadership theory, which stresses the importance of further contributions to the field of EQ within e-leadership. In addition, a better understanding of change management was contributed with the study, such as the importance of documentation and that employees are more used and adaptable to change due to the pandemic. Similarly, to EQ in e-leadership theory, there is limited data on change management in a virtual context.

6.3 Managerial implications of the study

Discussing managerial implications may help demonstrate the practicality of the research, observing the study not only being important theoretically but can also be utilized within a virtual environment in the real world. This sub-chapter will provide some recommendations for leaders based on research findings.

Leaders must double down on developing strong communication skills with a focus on empathy, different communication styles and tools, and general adaptability for communication. Open communication fosters a culture of trust within the organization, and it helps manage change in uncertain times. The leader's bond of trust with the employees is as strong as the level of effort and commitment that is being put into the relationship. Regular check-ins, team meetings, and a focus on output will strengthen trust over time. Leaders should acknowledge the significance of work-life balance by maintaining boundaries and providing best practices and advice for employees.

Leaders have a duty to improve emotional intelligence (EQ), especially working within a remote environment. EQ helps the leader to understand the frustrations and feelings of their team members. Finally, to stay ahead of change, leaders have an obligation to adapt and monitor for any emerging e-leadership skills and challenges to thrive better and stay prepared in the constantly changing virtual environment.

6.4 Limitations of the study

Limitations of a study are important to consider as it adds transparency to the research's credibility. Limitations may also help understand in what context the study has been conducted, which can prevent misinterpretation or generalization of results.

This study is a master's thesis which results in certain limitations such as time and resources. The first notable limitation of the study is the limited timeframe when the research had to be conducted. The second limitation relates to memory and the timing of the research. The pandemic began over three years ago, which may cause the participants to have forgotten certain elements of their experiences throughout the years. The third limitation is the mix of industries that were present in this research. Certain results may be more aligned with a specific industry which may cause overgeneralization when industries are mixed. The fourth limitation is the sample size which is also affected by time and resources. Although the goal of conducting eight

interviews was achieved, a larger sample size may bring up new findings or different views on the research topic.

6.5 Suggestions for future research

This study implies that remote working is here to stay, whether it is full-time or part-time, with a hybrid model. It would be interesting to observe and continue studying how virtual work is changing and evolving during the coming years. Are hybrid models the future, or are full-time remote work continuing to gain traction in a post-Covid-19 world or are we all heading back to the office full-time? Notably, a mix of industries was interviewed for this research and as a future proposition, the research may focus specifically on certain industries or even individual positions within that industry. It is also a possibility to conduct research based on age generations and how they have adapted to the world of virtual work.

Furthermore, this research observed a major lack of literature on the role of Emotional Intelligence (EQ) in the virtual environment. To add further insights to the already existing e-leadership theory, more research is needed on how EQ is utilized to maximize virtual team output and how it can benefit the virtual ecosystem.

A final proposition is to continue researching what e-leadership challenges are emerging in a post-Covid-19 environment. For example, is employee well-being getting better or worse with a mixed environment? Is it the leader's responsibility to provide tools and support to avoid employees getting burnt out, or is it up to each individual to take care of their well-being?

The rapid acceleration in virtual work will continue to bring up new challenges and required skills to operate successfully in a constantly changing digital world.

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Appendices

Appendix 1. Interview questions

General Questions about the interviewee:

- Your position in the company?
- How long have you held this position?
- Company or the industry of the company that you work for?
- Do you have any subordinates, if so, how many?

General Questions about Virtual teams

- What are some technology tools and softwares that you frequently use or have used to manage a virtual team?
- Can you list any advantages that you see with virtual teams in comparison to 'traditional' on-site teams?
- Can you list any disadvantages that you see with virtual teams in comparison to 'traditional' on-site teams?
- What would you list as the main differences between a virtual and a traditional team?

Leadership and Covid

- Prior to Covid, did you have any remote working experience?
- Since Covid, how often have you worked remotely? Feel free to give a brief overview of the past 3 years if it has changed
- How did the pandemic affect you as a leader?

Leadership Challenges in a virtual environment during Covid-19

- What are some e-leadership challenges that you have faced during the pandemic?
- Have you noticed any of the challenges to change or evolve during the pandemic?

1. Communication

- What is the primary way of communication that you use in a virtual environment?
- Have you faced any communication challenges that were not present in a traditional work setting?
- Have these communication related challenges evolved or changed during the pandemic?

2. Distance and Time

- Have you experienced any challenges with the lack of physical presence?
- Have you faced any challenges with having subordinates working remotely in different work environments? (*e.g., not in the same office or even overseas where even different time zones may be applicable*)
- Has there been challenges with making team members feel supported and connected while working remotely?
- Have any of these distance and time related challenges evolved or changed during the pandemic?

3. Trust

- Have you had any trust related challenges when working in a virtual environment?
- Have you sensed the need to increase/decrease supervision since the shift to remote work?
- Have you seen the context of trust change or evolve during the pandemic?

4. Diversity

- Have you experienced any diversity related challenges leading in a virtual environment?
- Have the diversity related challenges changed or evolved during the pandemic?

Any other e-leadership challenges that come to mind before we continue with the next part of the interview?

Skills and requirements:

- In your own words, what skills and requirements are needed for effective leadership in a virtual environment?
- Have the skills and requirements changed or evolved over the past 3 years?

1. Communication

- What are some communications skills required by a virtual leader?
- How do you ensure effective communication in a virtual team?
- Have you seen any changes or evolvement in communication skills during the pandemic?

2. Technology and technical skills

- What kind of technology and technical skills is required from the virtual leader?
- How do you or your company ensure that team members have the necessary technology skills to work effectively in a virtual environment?
- Have these technology skill requirements evolved or changed since pre-pandemic times until today?
- What are some main challenges related to technology when working remotely?

3. Change management

- What are some change management skills required in leading remotely?
- How do you manage change in a virtual team?
- Have any aspects of change management changed or evolved during the pandemic?

4. Trust building

- How do you establish and build trust in a virtual team?
- How do you (or would you) handle situations where trust is broken in a virtual team?
- Have you seen any changes or evolvement in trust building during the pandemic?

Any other e-leadership skills that come to mind before we continue with the closing questions?

Closing

- Finally, can you name any positive aspects of leading in a virtual environment?
- Is there anything else that you'd like to add to any of your answers or in general?